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Final

# River Mile 10.9 Removal Action Design Work Plan, Lower Passaic River Study Area

Prepared for  
Cooperating Parties Group, Newark, New Jersey

October 09, 2012

**CH2MHILL®**

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# Acronyms and Abbreviations

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AOC	Administrative Settlement Agreement and Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirements
BMP	best management practice
BODR	Basis of Design Report
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	<i>Code of Federal Regulations</i>
COPC	Chemicals of Potential Concern
CPG	Cooperating Parties Group
CQCP	Construction Quality Control Plan
dmi	de maximis, inc.
EHS	Environmental Health and Safety
EMP	Environmental Management Plan
FFS	Focused Feasibility Study
FS	Feasibility Study
ft	foot, feet
LPR	Lower Passaic River
LPRSA	Lower Passaic River Study Area
mg/kg	milligrams per kilogram
NCP	National Contingency Plan
ng/kg	nanograms per kilogram
O&M	operation and maintenance
OSC	On Scene Coordinator
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
PAH	polycyclic aromatic hydrocarbon(s)
PCB	polychlorinated biphenyls
PCDD	polychlorinated dibenzo-p-dioxins
PCDF	polychlorinated dibenzofurans
PE	Professional Engineer
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
QCSM	Quality Control Systems Manager
RCRA	Resource Conservation and Recovery Act
RD	removal design
RDWP	removal design work plan
RFP	request for proposal
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
RM	river mile
SME	subject matter expert
SOW	statement of work
TBC	to be considered
TCDD	tetrachlorodibenzo-p-dioxin
TCLP	Toxicity Characteristic Leaching Procedure

TCRA	Time-Critical Removal Action
USEPA	United States Environmental Protection Agency
yd <sup>3</sup>	cubic yard

# Introduction

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This Removal Action Design Work Plan (RDWP) for River Mile (RM) 10.9 of the Lower Passaic River (LPR) has been prepared by the Lower Passaic River Cooperating Parties Group (CPG) pursuant to the Administrative Settlement Agreement and Order on Consent for Removal Action, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Docket No. 02-2012-2015 (USEPA, 2012a; hereinafter referred to as the AOC). The AOC became effective on June 18, 2012 and is included as Appendix A.

The Removal Action will be conducted under both CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as a Time-Critical Removal Action (TCRA). This RDWP describes the process that will be employed to design the removal action selected by the U.S. Environmental Protection Agency (USEPA) in the Action Memorandum/Enforcement dated May 21, 2012 (USEPA, 2012b). The Action Memorandum/Enforcement is included as Appendix B of the AOC.

The purpose of this RDWP is to describe the overall Design and Implementation process for RM 10.9, including predesign investigations, design deliverables, project delivery, and the project schedule.

## 1.1 Removal Action Summary

The Removal Action is being performed to reduce the potential for exposure to receptors, and to mitigate potential migration of contaminated sediments from the RM 10.9 Removal Area (**Figure 1-1**). In addition to addressing these time-critical concerns, sediments removed from the RM 10.9 Removal Area will be used to conduct sediment washing bench-scale tests and potentially pilot scale tests dependent on the bench scale results.

Approximately 18,000 in situ cubic yards (yd<sup>3</sup>) of contaminated surface sediment will be removed from the top 2 feet (ft) of the RM 10.9 Removal Area (**Figure 1-2**); the amount will be refined during the design process. During the design of the Removal Action, the means and methods for sediment removal, including the appropriate best management practices (BMPs) to minimize the resuspension of contaminated sediment during removal, will be determined. A protective cap will be designed, constructed, monitored, and maintained over the RM 10.9 Removal Area. As part of the design process, a Long-Term Monitoring Plan, including operation and maintenance (O&M) procedures, will be developed in order to monitor the cap's performance with respect to the design standards during the postconstruction period. It is recognized that data from the performance monitoring effort may help inform future decisions and/or remedial designs for the Lower Passaic River Study Area (LPRSA).

## 1.2 Description of Work Area

### 1.2.1 Removal Area Evaluation

As indicated in the Action Memorandum/Enforcement, dated May 21, 2012 (USEPA, 2012b), sediment conditions at the RM 10.9 Removal Area meet a number of specific factors identified in 40 *Code of Federal Regulations* (CFR) Part 300.415(b)(2) for USEPA to consider in determining the appropriateness of a removal action, including, but not limited to the following:

- ☐ An actual or potential release of hazardous substances, including polychlorinated dibenzo-p-dioxins (PCDDs)/ polychlorinated dibenzofurans (PCDFs), polychlorinated biphenyls (PCBs), mercury, and polycyclic aromatic hydrocarbons (PAHs), exposing nearby human populations, animals or the food chain (40 CFR §300.415(b)(2)(i))
- ☐ Actual or potential contamination of sensitive ecosystems because of the presence of hazardous substances, including PCDDs/PCDFs, PCBs, mercury, and PAHs (40 CFR §300.415(b)(2)(ii))
- ☐ High levels of hazardous substances, including PCDDs/PCDFs, PCBs, mercury, and PAHs, present at or near the surface of the sediment that could migrate or be released because of weather and/or hydrologic conditions (40 CFR §300.415(b)(2)(iv)-(v))

## 1.2.2 Physical Location

The RM 10.9 Study Area extends, bank to bank, between RM 10 and RM 12 of the LPRSA (**Figure 1-1**). The RM 10.9 Sediment Deposit Area (**Figure 1-2**) extends approximately 2,380 ft from RM 10.65 to RM 11.1, along an inside bend of the LPR, upstream of the DeJessa Park Avenue Bridge, which includes the mudflat and point bar in the eastern half of the river channel.

The RM 10.9 Removal Area (**Figure 1-2**) is an approximately 5.6-acre area within the RM 10.9 Sediment Deposit Area, bounded to the west by the navigation channel limits, and bounded on the east by the mean high water elevation. Further east is Riverside County Park, owned and operated by Bergen County and located in the Town of Lyndhurst. The removal area is approximately 0.6 acres greater than that specified in the AOC due to the inclusion of a narrow area that extends approximately 700 ft to the northeast. This area was included after a further review of the additional delineation sampling conducted by the CPG at the direction of USEPA (RM 10.9 QAPP Addendum A, May 2012). As a result of the additional delineation sampling the CPG proposed in its August 1, 2012 letter to USEPA to include the additional 0.6 acres into the RM 10.9 Removal Area.

The area adjacent to the RM 10.9 Removal Area consists predominately of recreational facilities such as parkland and ball fields. A number of public boat launches are also located in the vicinity, and use of LPR for recreational boating is ongoing and significant. Individuals using the park including boaters, waders, and anglers, could potentially be exposed to the sediments within the RM 10.9 Removal Area.

## 1.2.3 Site Characteristics

Portions of the LPR below Dundee Dam can be characterized as stratified estuary. The LPRSA receives inflows of marine (salt) water from Newark Bay and fresh water from the Upper Passaic River (above Dundee Dam) and its tributaries, surface runoff, combined sewer overflows, and stormwater outfalls (below Dundee Dam). The less-dense fresh water flows downstream over the tidally influenced salt water, which, on the flood tide, moves upstream from Newark Bay. The exact extent of the salt front “wedge” (i.e., the wedge-shaped intrusion of salt water into the estuary that slopes downward in the upstream direction) is dependent on the phase of the tide and the volume of fresh water flowing downstream.

The LPR at RM 10.9 is categorized as an FW2-NT/SE2 water body from Dundee Lake downstream to the confluence with Second River. The designated uses of FW2 water bodies per New Jersey Administrative Code (NJAC) 7:9B-1.12 includes the following:

1. Maintenance, migration and propagation of the natural and established biota;
2. Primary contact recreation;
3. Industrial and agricultural water supply;
4. Public potable water supply after conventional filtration treatment ( a series of processes including filtration, flocculation, coagulation, and sedimentation, resulting in substantial particulate removal but no consistent removal of chemical constituents) and disinfection; and
5. Any other reasonable uses.

In all SE2 waters the designated uses are:

1. Maintenance and migration of fish populations
2. Migration of diadromous fish
3. Maintenance of wildlife
4. Secondary contact recreation; and
5. Any other reasonable uses

In 2004, USEPA commenced a remedial investigation and feasibility study (RI/FS) of the 17-mile LPRSA, funded by a group of potentially responsible parties known as the Lower Passaic River CPG under a settlement agreement pursuant to CERCLA Section 122(h), 42 U.S.C. § 9622(h). The RI/FS represented USEPA's portion of work being undertaken by a partnership of federal and State of New Jersey agencies under CERCLA and the federal Water Resources Development Act. In May 2007, USEPA entered into a second settlement agreement (the RI/FS agreement) with the CPG, under which the CPG agreed to complete the LPRSA RI/FS under the direction and oversight of USEPA.

Sediment samples collected in the vicinity of RM 10.9 Sediment Deposit Area as part of the RI/FS Low Resolution Coring Program suggested that concentrations above river-wide averages of PCDDs/PCDFs, PCBs, mercury, PAHs, and other contaminants may be present in this area. The measured concentrations coupled with the proximity of this area to Riverside County Park prompted the CPG to further evaluate the potential exposure to individuals using the park. In April 2011, the CPG proposed, and USEPA agreed, that the CPG would undertake additional sampling and data collection to characterize the RM 10.9 Study Area (de maximis, inc. [dmi], 2011).

The data from the sediment samples collected by the CPG in 2011 confirmed that portions of the sediment located in the RM 10.9 Sediment Deposit Area, including a mudflat on the eastern shore of the LPR that is exposed at low tide, contained elevated concentrations of PCDDs/PCDFs, PCBs, mercury, and PAHs (CH2M HILL and AECOM, 2011). In the uppermost 6 inches of sediment, peak concentrations detected include 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) at 29,000 nanograms per kilogram (ng/kg), PCBs at 34 milligrams per kilogram (mg/kg), mercury at 22 mg/kg, and total high-molecular-weight PAHs at 510 mg/kg. Elevated concentrations of PCDDs, PCDFs, PCBs, and mercury are generally co-located in surface and subsurface sediments. The RM 10.9 Removal Area dimensions were determined based on a review of sediment data collected at 54 locations within the RM 10.9 Sediment Deposit Area and were further refined based on data collected during a predesign investigation.

USEPA has also conducted additional soil sampling in the parks adjacent to the RM 10.9 Sediment Deposit Area. Concentrations detected in the parks were below levels of concern, and no additional action in the park is considered at this time.

## 1.3 Summary of Anticipated RM 10.9 Work

The CPG is required to perform all actions necessary to remove, treat, and/or properly dispose of approximately 18,000 yd<sup>3</sup> of sediment from RM 10.9 Removal Area (**Figure 1-2**) to a depth of 2 ft.

The CPG proposes removing the debris and sediment associated with the removal action via on-water operations using mechanical dredging equipment equipped with an environmental clamshell bucket or similar tool and transferring the debris and sediment to material-handling barges. Staging construction from the water side is advantageous because of access constraints and related logistical issues associated with land-based staging. The dredged material will then be transported down river to an offloading facility for treatment and offsite disposal. The details of the debris and dredging operations (including equipment type, size, configuration and transport methods, and treatment approach) will be identified during design.

Varying bridge, channel dimensions, and tidal/river stage fluctuations constrain navigation access to differing degrees along the LPR. Consequently, it will be necessary to size the on-river transport equipment that can be used at the RM 10.9 Removal Area such that debris and sediment can be transported offsite and downriver to either the pilot-scale testing vendors' facilities (if pilot testing is completed) or a waterside stabilization processing facility.

To investigate alternate dispositions for removed sediments other than landfilling, a portion of the removed sediments may be used for pilot-scale testing. At this time, the CPG and USEPA have agreed that CPG will consider such testing of sediment-washing technologies, and that the decision to proceed will be based on the results of

bench-scale sediment washing tests.<sup>1</sup> Thus selected vendors of treatment technologies will conduct bench-scale testing to demonstrate their ability to effectively and efficiently treat sediments for beneficial reuse or for disposal at a lower cost facility and/or to reduce the long-term liability for the CPG that would be incurred based on disposal of untreated sediments. The vendors will provide proposals for pilot-scale testing of their technologies to the CPG. The CPG will prepare a report for submittal to USEPA that explains the rationale for whether or not pilot-scale testing will proceed. The treated sediment will be disposed of at an appropriately permitted USEPA-approved disposal facility.

All untreated sediment from RM 10.9 Removal Area will be sent to a waterside processing facility for sediment washing and/or stabilization before transport and disposal at an at an appropriately permitted USEPA-approved disposal facility.

Following completion of the sediment removal, a protective cap will be constructed, monitored, and maintained over the Removal Area. Data gathered during the monitoring of the performance of this cap will be evaluated and taken into consideration in the LPRSA RI/FS and may help inform the remedy selection process for future response actions. Placement techniques for the cap materials will be evaluated during the design. Staging of capping materials may occur at the Riverside County Park and/or at a contractor's staging area.

## 1.4 Overview of Removal Design Process

Before the effective date of the AOC, the CPG began developing plans for design, including preparing and collecting necessary predesign data. Consistent with requirements of the AOC and Statement of Work (SOW), the overall design process will consist of the following four main stages:

- ☐ Predesign activities
- ☐ Basis of design
- ☐ Prefinal design
- ☐ Final design

The predesign activities stage consists primarily of collecting and analyzing data necessary to support the removal design for the TCRA. Predesign activities are described in Section 2.

The basis of design will be the second stage of the actual design process and is expected to represent a 30 percent complete design product (further described in Section 3).

The prefinal design will supplement the basis of design using results of the predesign activities and bench-scale testing and incorporate additional details necessary to produce a technically complete (100 percent) design package. The prefinal design will produce a complete set of drawings and specifications to support development of procurement packages for each of the engineering components. The prefinal design will be submitted to USEPA for review (further described in Section 3).

The final design will incorporate comments from USEPA and result in a complete design package ready for implementation in the RM 10.9 TCRA (further described in Section 3).

Design activities are described in Section 3. The design deliverables and the design schedule are presented in Section 4. The delivery and implementation strategy is discussed in Section 5.

## 1.5 Removal Action Objectives

The objectives for the RM 10.9 TCRA include the following:

- ☐ Reduce the potential for exposure to receptors from sediments present in the RM 10.9 Removal Area.
- ☐ Remove approximately 18,000 yd<sup>3</sup> of surface sediment (top 2 ft) and should sediment washing be selected for pilot scale demonstration, provide all or a portion of this removed amount up to 18,000 yd<sup>3</sup> for pilot-scale ex

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<sup>1</sup> The bench-scale tests for evaluating the ex-situ treatment technologies were completed in August 2012, prior to the finalization of this RDWP. The removal efficiencies of PCDD/PCDF by sediment washing bench-scale tests were minimal (~25%) resulting in total dioxin TEQ concentrations in the treated sediment which were well above residential cleanup standards established by USEPA. Based on these results, the CPG will not be conducting sediment washing pilots of RM 10.9 sediment (CPG September 2012).

situ beneficial reuse treatment studies to evaluate the feasibility and cost-effectiveness of sediment washing. The ex situ volume to be treated by sediment washing will be dependent on the ability of the vendors to demonstrate through bench-scale tests the capabilities of their technologies, the capacity of the vendor's treatment systems and their materials-handling capabilities.

- ☐ Evaluate the means and methods for sediment removal and determine the potential impacts of sediment removal methods on surface water quality, and the means, if feasible, to minimize these impacts for the selected overall river remediation remedy.
- ☐ Evaluate effectiveness of sediment capping methods to reduce bioavailability and migration of chemicals of potential concern (COPCs) for the selected overall river remedy, including amending caps with activated carbon to mitigate the potential for contaminants migrating through the sand caps.
- ☐ Begin implementation of the Removal Action in May 2013.

## 1.6 Previous Project Documents

This RDWP is supplemented by the following documents, which have been previously prepared by the CPG:

- ☐ RM 10.9 Characterization Program Summary Report
- ☐ RM 10.9 Quality Assurance Project Plan (QAPP) Revision 3
- ☐ RM 10.9 QAPP Addendum A
- ☐ RM 10.9 QAPP Addendum B
- ☐ RM 10.9 QAPP Addendum C

## 1.7 Work Plan Organization

The remainder of the RDWP includes the following sections:

- ☐ *Section 2—Predesign Activities:* Provides details regarding the collection of additional data to support the removal design and details of the bench-scale/pilot-scale treatability studies.
- ☐ *Section 3—Engineering Design Process:* Presents the engineering design process, including a description of the design stages, the various design components, and the specific design activities to be completed. This section also provides the design quality assurance/quality control (QA/QC) requirements to be followed during the design process.
- ☐ *Section 4 – Deliverables:* Describes the deliverables to be prepared in support of the removal design, including predesign studies, design support deliverables, engineering design deliverables, and the overall project schedule.
- ☐ *Section 5—Delivery and Implementation Strategy:* Provides the project management approach for the RM 10.9 TCRA.
- ☐ *Section 6—References:* Lists documents and additional references cited in this RM 10.9 RDWP.





Notes:  
1. Image Source: Bing Maps  
2. The RM 10.9 Study Area extends from RM 10 to RM 12.

**FIGURE 1-1**  
Lower Passaic River and RM 10.9 Study Areas  
RM 10.9 Removal Action Design Work Plan  
Lower Passaic River Study Area, New Jersey





DAY:\ANTIGONE\PROJ\LOWERPASSAICRIVER\GRIP\412305\LOWERPASSAIC\FIGS\GIS\MAPFILES\RM10-9\RDWP\FIG1-2\_LPR\_10-9\_SED\_DEP\_RM\_AREA\_RDWP.MXD ECLARK1 7/20/2012 9:01:58 AM



Notes:

1. Orthophoto: NJGIS, 2007
2. The Extent of Potentially Exposed Surface Sediment was generated from the -2ft (NGVD29) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 Bathymetry Survey conducted as part of the RM 10.9 Characterization Program (CH2M HILL & AECOM, 2012).

0 50 100 200 300 Feet

LEGEND

- Extent of Potentially Exposed Surface Sediment
- Navigation Channel
- RM10.9 Removal Area
- RM 10.9 Sediment Deposit Area

FIGURE 1-2

RM 10.9 Sediment Deposit and Removal Areas  
RM 10.9 Removal Action Design Work Plan  
Lower Passaic River Study Area, New Jersey

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## Predesign Activities

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### 2.1 QAPP Addendum A and Data Collection Activities

The CPG and USEPA determined that it was necessary to further define and delineate elevated levels of COPCs observed in the RM 10.9 Sediment Deposit Area during the RM 10.9 Characterization Program activities. Specifically, additional samples were required at locations upstream and along the eastern shore of the RM 10.9 Sediment Deposit Area.

Therefore, in order to refine the delineation of the RM 10.9 Removal Area, the CPG prepared the RM 10.9 QAPP Addendum A. This QAPP addendum was submitted to USEPA on May 10, 2012 (Rev. 0); Rev. 1 was submitted to USEPA on May 18, 2012. Field activities occurred the week of May 20, 2012. The delineation of contamination in the sediment in the RM 10.9 sediment area provides important information to design the Removal Action.

### 2.2 Data Gap Analysis and Data Collection Quality Assurance Project Plan

The CPG has conducted a data gaps analysis of the RM 10.9 Removal Area following completion of the 2011 RM 10.9 Characterization Program activities. The purpose of the data gaps analysis was to determine what additional data are required to support the removal and capping design. This analysis included a review of the RM 10.9 Characterization Program data, including sediment sampling and analysis, bathymetry measurements, and characterization of local hydrodynamics. A Data Collection QAPP (QAPP Addendum C, Rev. 0) for the data identified as necessary for the removal design was prepared and submitted to USEPA on May 30, 2012, to provide the details of the collection of these additional data. The scope of work, which was carried out the week of June 25, 2012, included the advancement of geotechnical borings and collection of engineering data needed to support the rationale for use of Best Management Practices, as described in the BODR, and the potential design of other sediment resuspension control measures, in the event these control measures are needed during sediment removal and capping activities.

### 2.3 Bench-Scale Testing and Report

Sediment washing is being considered as the treatment technology of interest for removing site-specific COPCs from the RM 10.9 Removal Area sediments. Bench-scale testing will be performed on representative sediment samples from the RM 10.9 Removal Area. This is a first step towards evaluating potential ex-situ treatment options for the contaminated sediments that could be generated from environmental dredging in the LPR. The primary objective of the bench-scale tests is to determine the technical efficacy and cost-effectiveness of the sediment-washing process for removing site-specific COPCs from the RM 10.9 Removal Area sediments. The bench-scale tests will provide information to prepare a preliminary evaluation of the potential effectiveness and implementability of each technology at the pilot scale. These bench-scale tests may include, for example, jar testing, laboratory-scale (e.g., 1/12 pilot scale) batch unit optimization, and process validation. The bench-scale test results will also provide a basis for the vendor(s) to develop estimates of pilot-scale implementation unit costs to meet performance standards.

The CPG will provide a report with the findings of the bench-scale tests to USEPA. The report will contain the results of the bench-scale tests, including the efficacy and efficiency of treatment, and most importantly the vendor's proposal to conduct the pilot-scale test. The report will also contain the CPG's rationale and resulting decision of whether the technologies will be taken to the pilot scale and used to treat RM 10.9 sediments.



# Engineering Design Process

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This section describes the overall design process, design quality assurance and quality control, and the design process for each design element.

## 3.1 Overall Design Process

Following the predesign activities stage described in Section 2, three design stages will be conducted:

- ☐ Basis of design
- ☐ Prefinal design
- ☐ Final design

As stated in the AOC, the RDWP will be prepared and submitted in parallel with the Basis of Design Report (BODR). Developing these documents concurrently will enable the CPG to meet the aggressive project schedule. Furthermore, the design of the various components (e.g., sediment removal, sediment handling and processing, water treatment, transportation, and disposal) will be conducted in an iterative manner in order to optimize efficiency, since the design of one component can greatly influence the requirements of another component. Therefore, the entire process from sediment removal to disposal needs to be optimized on an iterative basis before the design can be completed.

The overall sequence of these design stages and general work products, as well as the design schedule are shown in the design process flow diagram (**Figure 3-1**). The design deliverables are further summarized and the design schedule is presented in Section 4.

### 3.1.1 Basis of Design

The BODR will document the key elements associated with the design process, including design criteria, design inputs, design approach, and assumptions, to provide the foundation for executing the prefinal design and final design and communicating the basis of design decisions for the project. The BODR will be used as a guide to ensure that the prefinal design and final design meet the design intent. The BODR will consist of the following:

- ☐ Results of studies and additional field sampling and analysis, if any, conducted after the predesign
- ☐ Preliminary figures support development of plans, drawings, and sketches
- ☐ Methods of sediment removal including resuspension control (if deemed necessary); sediment transport, off-loading, stockpiling, sediment treatment, stabilization or potentially dewatering, including process water treatment and discharge; treated/stabilized sediment transport and disposal; and capping, including cap materials transport and cap placement
- ☐ Design assumptions and parameters, including design constraints, treatment process and capping performance criteria (including byproducts concentration and volume if available), and preliminary design calculations
- ☐ Outline of implementation specifications
- ☐ Proposed siting/locations of staging and processing
- ☐ Weather and river conditions (flow and tidal dynamics) monitoring
- ☐ Substantive requirements of Applicable or Relevant and Appropriate Requirements (ARARs)
- ☐ Preliminary project schedule
- ☐ Anticipated long-term monitoring and O&M requirements

### 3.1.1.1 Waterside Facilities for Dredging and Capping Support

Waterside facilities adjacent to the LPR or within the New York/New Jersey Harbor Complex nearby will be required to support marine activities such as dredging and capping. A staging/storage area will typically be used for off-loading dredged sediment/debris and equipment and for loading capping materials onto barges. The dredging/capping contractor(s) will be responsible for providing their own marine access and related properties for staging materials and operations.

### 3.1.1.2 Dredging and Dredged Material Transport

The equipment chosen for dredging and dredge material transport will depend on many factors, such as the attributes of the dredge prisms (areas and volumes); amount and type of debris; characteristics of the water body where the dredging will occur; and postdredging processes, including handling, processing, and disposal methods. A preliminary evaluation of these factors suggests that the dredging will be completed using excavators or crane-operated clam-shell buckets and that sediment and debris will be transported on the LPR by barges. The design scope of work for dredging and dredge material transport will consist of the following:

- ☐ Identify design constraints for dredging and material transport
- ☐ Evaluate mechanical methods for sediment removal and in-river transport
- ☐ Conduct preliminary design calculations (volumes, production rates, mass/process flow diagram)
- ☐ Prepare outline of technical specifications
- ☐ Prepare outline of engineering drawings
- ☐ Prepare a preliminary dredge plan that will consist of the following:
  - ☐ Removal objectives
  - ☐ Preliminary equipment selection and sizing
  - ☐ Anticipated production rates
  - ☐ Equipment cycle times
  - ☐ Debris removal
  - ☐ Required interaction with shore-based facilities
  - ☐ Sequencing of operations to meet production requirements
  - ☐ Preliminary resuspension management plan
- ☐ Prepare preliminary environmental management plan
  - ☐ During the BODR, preliminary engineering drawings, specifications, and preliminary dredging plans will be used to obtain proposals from prequalified contractors. Contractors will submit proposals based on performance-based specifications as further described in Section 5

### 3.1.1.3 Dredged Material Off-Loading and Treatment

Sediment removed as part of this Removal Action will be transported to either the selected sediment-washing vendors' site for off-loading or to an alternate off-loading site for treatment by stabilization or dewatering. It is assumed that the sediment-washing, stabilization or dewatering treatment contractors/vendors will provide their own marine access and related properties for off-loading and either treating and/or stabilizing or dewatering the sediment.

### 3.1.1.4 Capping

Following completion of the sediment removal, an appropriately protective cap will be constructed, monitored, and maintained over the RM 10.9 Removal Area. The cap will be constructed using suitably protective cap design which may include the use of activated carbon layers or other materials to provide chemical isolation, as well as cap armoring, to protect portions of the RM 10.9 Removal Area subject to higher shear stresses from potential erosion. The BODR for capping will consist of the following:

- ☐ Review of hydrodynamic conditions and geotechnical properties of the sediment
- ☐ Cap design and perform analytical model calculations
- ☐ Preliminary engineering calculations for cap armoring

- ☐ Preliminary cap cross section(s) necessary to prevent the migration of the COPCs into the environment and to physically protect the cap's integrity from forces such as erosion
- ☐ Evaluation of cap materials placement techniques

### 3.1.1.5 Treated Material Transport and Disposal

The final disposition of the removed sediment will be independent of the treatment method(s) but dependent on the characteristics of the sediment, and available disposal facilities. It is assumed that the treated/stabilized or dewatered sediment will be transported by truck or existing rail facilities to the ultimate disposal facilities, as the volume of dredged sediment does not justify the expense of developing new rail transport capability. The BODR will verify that truck transportation and/or existing rail facilities will be able to transport the treated/stabilized sediment to the final disposal facility efficiently and safely. Based on preliminary results, the sediment is anticipated to be nonhazardous; however, to best manage liability associated with the sediment, the CPG plans to initially develop and distribute requests for proposals to commercial RCRA Subtitle C disposal facilities, which are all located out of state.

The BODR will evaluate potential landfill disposal options for sediments excavated from the RM 10.9 Removal Area. The landfill disposal selection will be governed predominantly by the RCRA hazardous waste status of the sediment (i.e., hazardous or nonhazardous) and the varying restrictions of Subtitle D (nonhazardous) landfills on accepting materials containing dioxins. This evaluation will consist of the following:

- ☐ Collect samples for Toxicity Characteristic Leaching Procedure (TCLP) analysis from the RM 10.9 Removal Area
- ☐ In accordance with the USEPA Memorandum dated November 12, 2008, *Consideration of Passaic River Sediments Pursuant to 40CFR Section 261.31*, confirm that the sediment from the RM 10.9 Removal Area will not be considered a listed RCRA waste per USEPA
- ☐ Review and compare RM 10.9 Removal Area characterization data to regulatory criteria
- ☐ Identify potential disposal sites and their specific acceptance criteria with regard to COPCs found at the RM 10.9 Removal Area

### 3.1.2 Prefinal Design

The prefinal design will advance the level of design from the BODR stage by incorporating additional information/studies from predesign activities, contractor-specific information (Section 5), and further design analysis. The prefinal design will produce a complete set of contractor performance requirements/specifications and task-specific plans and drawings. The prefinal design will consist of the following:

- ☐ Results of studies and additional field sampling and analysis, if any, conducted after the predesign
- ☐ Design assumptions, parameters, and constraints
- ☐ Design calculations
- ☐ Implementation plans and drawings
- ☐ Implementation specifications
- ☐ Implementation QAPP
- ☐ Implementation health and safety plan, including community health and safety concerns
- ☐ Dredge plan
- ☐ Sediment transport plan
- ☐ Sediment off-loading plan
- ☐ Sediment treatment/stabilization plan (process water and disposal)
- ☐ Treated/stabilized/dewatered sediment transport and disposal plan
- ☐ Sediment capping plan (including materials transport and staging)
- ☐ Implementation quality control plan
- ☐ Preparation of ARARs compliance document to address substantive requirements
- ☐ Environmental Management Plan (EMP)
- ☐ River traffic control procedures

- ☐ Weather and river conditions monitoring
- ☐ Project schedule
- ☐ Long-term monitoring and O&M plan

### 3.1.2.1 Dredging and Dredged Material Transport

The plans and specifications will be prepared consistent with the construction approach identified during the BODR. The design documents to be prepared for this activity will consist of the following:

- ☐ Draft design calculations (volumes, production rates, and mass/process flow diagram)
- ☐ Implementation technical specifications
- ☐ Implementation engineering drawings
- ☐ Draft dredge plan
  - ☐ Removal objectives
  - ☐ Equipment selection and sizing
  - ☐ Anticipated production rates
  - ☐ Equipment cycle times
  - ☐ Debris removal
  - ☐ Required interaction with shore-based facilities
  - ☐ Sequencing of operations to meet production requirements
- ☐ Draft spill prevention, containment, and countermeasures plan
- ☐ Develop preliminary river traffic control measures that will consist of the following:
  - ☐ Outlines of channel markings
  - ☐ Navigational aids
  - ☐ Communication protocol
  - ☐ Other measures required for safe interaction with recreational and commercial shipping in the vicinity of the dredging
- ☐ Resuspension management

### 3.1.2.2 Dredged Material Off-Loading and Treatment

Sediment removed as part of this action will be transported to either the selected sediment washing vendors' site for off-loading or to an alternate off-loading site for stabilization or dewatering. It is assumed that the sediment-washing and stabilization or dewatering treatment contractors/vendors will provide their own offsite marine access and related properties for off-loading and either treating or stabilizing or dewatering the sediment. The following tasks will be performed in the prefinal design:

- ☐ Select potential sediment stabilization or dewatering contractors/vendors with off-loading capabilities and their availability
- ☐ Determine potential sediment washing vendors with off-loading capabilities and whether the CPG intends to proceed with a sediment-washing pilot-scale project(s)
- ☐ Select landfill disposal options for treated and stabilized or dewatered sediment
- ☐ Prepare implementation drawings and specifications

### 3.1.2.3 Capping

The appropriate method(s) for incorporating activated carbon into the cap cross section will be determined. The plans and specifications will be prepared consistent with the construction approach identified during the BODR. It is assumed for the purpose of estimating the prefinal design's level of effort that the same contractor selected to dredge the sediment will also place the cap.

### 3.1.2.4 Treated Material Transport and Disposal

The key design elements to be addressed during prefinal design of the treated material transport and disposal component consist of the following:



- ☐ Site visits to observe facility operations and audits of the compliance history and permit requirements will be conducted
- ☐ USEPA Off-Site Rule coordinator approval will be obtained for the selected sediment management and disposal facilities
- ☐ Engineering drawings for procurement of treated/stabilized or dewatered sediment transport will be implemented
- ☐ Technical specifications for procurement of treated/stabilized or dewatered sediment transport and landfill disposal will be prepared

The prefinal design will verify the most effective mode of transportation for the treated/stabilized or dewatered sediment to a final disposition facility (landfill). A truck route from the treatment/stabilization or dewatering site to disposal facility will be determined. It is assumed that drawings and specifications will be prepared for transport of the treated/stabilized or dewatered sediment to a disposal facility. The prefinal design will also determine whether the transport of the treated/stabilized or dewatered sediment to the disposal facility will be a separate contract or included as part of another contract.

The prefinal design will prepare specifications for the procurement of disposal at either a Subtitle C or D landfill as determined in the BODR.

### 3.1.2.5 Pilot-Scale Testing

If the CPG provide a notice to proceed with pilot-scale testing of some portion of the RM 10.9 Removal Area sediments, the CPG will, in coordination with the vendor(s) selected, submit the pilot-scale testing work plan to USEPA for review. The work plan submittal may include the following:

- ☐ Pilot-scale testing objectives/purpose
- ☐ Pilot-scale testing success criteria
- ☐ Permits and other legal requirements, unless work will occur entirely onsite, in which case the submittal will address substantive requirements of ARARs
- ☐ Pilot-scale testing assumptions and design constraints
- ☐ Proposed siting/locations of staging areas and treatment processes
- ☐ Real estate and easement requirements
- ☐ Methods and details of the proposed pilot-scale test activities including sediment off-loading, stock piling, screening, sediment preparation, sediment treatment and disposal, and water treatment
- ☐ Treatment process performance criteria, treatment unit processes, representativeness of removed material, expected removal or treatment efficiencies (concentration and volume), mass balances and design calculations
- ☐ Drawings and technical specifications
- ☐ Details of measurements and observations to be conducted for the pilot-scale testing
- ☐ Details of environmental monitoring to be conducted (i.e., odor, noise, and water discharge)
- ☐ Responsibility and authority of all organizations and key personnel
- ☐ Overall management strategy for completion of the tasks
- ☐ A project schedule including all major activities and deliverables

Once the USEPA receives the CPG's notice to proceed, the CPG may implement the pilot-scale testing work plan in accordance with the work plan's schedule. The CPG may terminate the pilot test(s) at its discretion and inform the



USEPA of the rationale in a written report. Final disposal of the sediment will be in an appropriately permitted, USEPA-approved offsite facility.

### 3.1.3 Final Design (100 Percent)

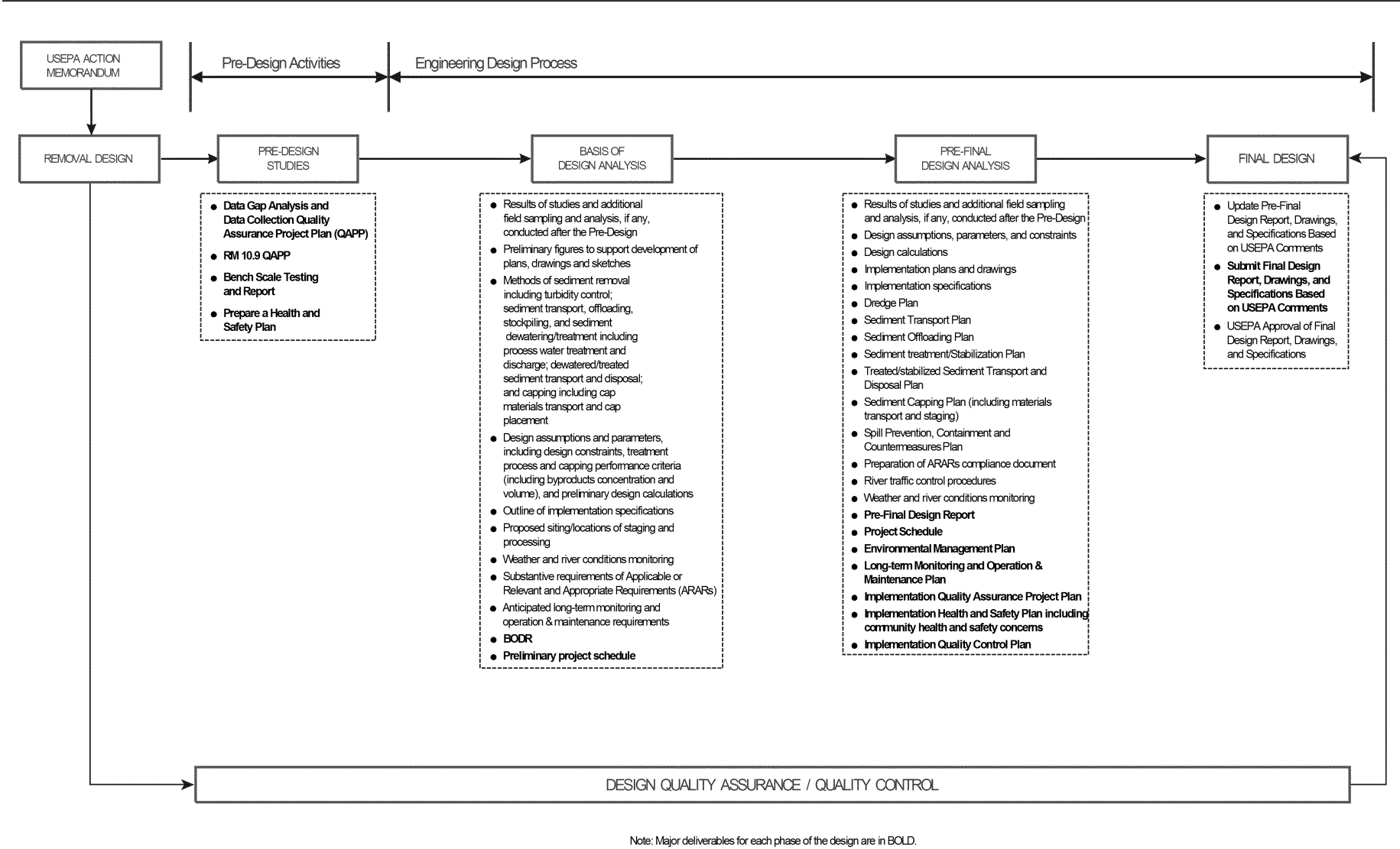
The final design will be the revised prefinal design that fully incorporates the USEPA comments. The final design submittals will include those elements listed for the prefinal design. The final design will be considered a complete design package ready for implementation of the removal and capping action.

## 3.2 Design Quality Assurance/Design Control

The design team will use the tools, procedures, and policy documents developed by CH2M HILL for design and successful execution of sediment related projects. The team will also use discipline-specific checklists for each phase of the project, as applicable. The checklists are intended to include typical items required in applicable USEPA QA reference documents and internal standard of practice QA checks and protocols. The checklists will be completed by the discipline lead, signed, and given to the reviewer for their approval and signature. These checklists will be used to document and verify the completion of each design phase and define the remaining deficiencies that need correction. The signed checklists will be kept in the project files.

The specific quality management metrics for measuring success of the project, specifically meeting the USEPA's expectations and managing the identified risks that can be managed through quality performance of the work, includes the following:

- ☐ Internal reviews conducted with sufficient time to properly adjudicate comments
- ☐ Documents approved by internal and external stakeholders with no significant modifications or revisions
- ☐ Documents submitted on or before required due dates
- ☐ Risks identified and mitigated or managed without major impacts to the project
- ☐ Cost and level-of-effort budgets managed to allow work to progress without delays or stoppage



**Figure 3-1**  
Design Process Flow Diagram  
RM 10.9 Removal Action Design Work Plan  
Lower Passaic River Study Area, New Jersey

## SECTION 4

# Deliverables

This section describes the deliverables to be prepared in support of the removal design, including predesign studies, design support deliverables, and engineering design deliverables. This section also describes the communication approach and presents the proposed design schedule. The list of deliverables (**Table 4-1**) includes those required plans listed in the AOC and associated SOW (**Appendix A**).

TABLE 4-1  
RM 10.9 Project Deliverables

Deliverable	RDWP Section Where Described
<b><i>Predesign</i></b>	
Bench-Scale Testing Quality Assurance Project Plan	4.1.1
Bench-Scale Testing Report	2.3, 4.1.2
Pilot-Scale Testing Work Plan	3.1.2, 4.2.4
Health and Safety Plan	4.2.5
<b><i>Basis of Design</i></b>	
Basis of Design Report	3.1.1, 4.2.1
Project Schedule	4.4
<b><i>Prefinal Design</i></b>	
Prefinal Design Report	3.1.2, 4.2.2
Environmental Management Plan	4.2.7
Construction Quality Control Plan	4.2.6
Long-Term Monitoring and Operation and Maintenance Plan	4.2.8
<b><i>Final Design</i></b>	
Final Design Report	3.1.3, 4.2.3
<b><i>Implementation</i></b>	
Final Report	4.3

## 4.1 Predesign

### 4.1.1 Bench-Scale Testing Quality Assurance Project Plan

The CPG submitted the bench-scale testing QAPP on June 18, 2012, for each sediment treatment vendor that was asked to conduct bench-scale tests as described in the SOW.

### 4.1.2 Bench-Scale Testing Report

Within 90 days after USEPA has received the bench-scale testing QAPP, the CPG will submit to USEPA the bench-scale testing report, as set forth in the SOW.

## 4.2 Design

### 4.2.1 Basis of Design Report

By August 2, 2012, 45 days from the effective date of the AOC (June 18, 2012), the CPG will submit the Removal Action BODR. The BODR will be prepared based on the results of data collected pursuant to the RM 10.9 QAPP and the capping and removal predesign activities.

### 4.2.2 Prefinal Design Report

Within 60 days of the USEPA accepting the BODR, the CPG will submit the prefinal design. The prefinal design will fully incorporate USEPA comments made to the removal and capping work plan/BODR and include the additional information as described in Section 3.1.2.

### 4.2.3 Final Design Report

Within 60 days of the USEPA accepting the prefinal design report, the CPG will submit the final design. The final design submittal will include those elements listed in the prefinal design and will fully incorporate USEPA's comments on the prefinal design report.

### 4.2.4 Pilot-Scale Testing Work Plan

Within 60 days after USEPA's acknowledgement of the CPG's decision to proceed with pilot-scale testing, the CPG will submit the pilot-scale testing work plan. The pilot-scale testing work plan will include the information outlined in Section 3.1.2.

### 4.2.5 Health and Safety Plan

Within 30 days after the effective date, the CPG will submit for USEPA review and comment a plan that ensures the protection of the public health and safety during performance of work under this Settlement Agreement. This plan will be prepared in accordance with USEPA's *Standard Operating Safety Guide* (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan will comply with all currently applicable Occupational Safety and Health Administration (OSHA) regulations found at 29 C.F.R. Part 1910. If USEPA determines that it is appropriate, the plan will also include contingency planning. The CPG will incorporate all changes to the plan recommended by USEPA and will implement the plan during the pendency of the Removal Action. The CPG may submit an amendment to the health and safety plan submitted pursuant to the RI/FS Settlement Agreement to satisfy this requirement.

### 4.2.6 Construction Quality Control Plan

As part of the prefinal design, a construction quality control plan (CQCP) will be prepared to describe the organization, inspections, tests, procedures, and documentation necessary to ensure work complies with approved plans and contract requirements applicable to the construction efforts, including work by subcontractors and suppliers (i.e., one CQCP for the full team effort).

The CQCP will detail the roles and responsibilities of the site personnel, including the Quality Control System Manager (QCSM), and QC inspectors/site engineers/sampling technicians. It will also provide checklists and forms to be used during various inspection activities to be conducted before, during, and after construction activities. In addition, it will outline the steps to be taken to control and document substantive changes or deviations to any planning or contract requirements.

### 4.2.7 Environmental Management Plan

As part of the prefinal design, an EMP will be developed to manage environmental issues associated with the removal and capping works. The EMP will address the following issues:

- ☐ Environmental management objectives
- ☐ Regulatory requirements
- ☐ Environmental targets
- ☐ Roles and responsibilities of project personnel

- ☐ Practices and procedures that will be adopted to minimize environmental impacts
- ☐ Environmental management and monitoring
- ☐ Inspections and corrective actions
- ☐ Community consultation and complaints handling

Several components will be developed as part of the EMP to address the specific environmental aspects of the project. These components are as follows:

- ☐ Surface water quality monitoring plan
- ☐ Air quality monitoring plan, if applicable
- ☐ Odor monitoring plan
- ☐ Noise monitoring plan, if applicable
- ☐ Complaints response protocol

Input to each of these components will be provided as the design progresses from the BODR to the prefinal design phase.

#### 4.2.8 Long-Term Monitoring and Operation and Maintenance Plan

In accordance with the AOC, or as otherwise directed by USEPA, the CPG will submit a long-term monitoring and O&M plan, which will meet the requirements for postremoval site control consistent with Section 300.415(l) of the NCP and Office of Solid Waste and Emergency Response (OSWER) Directive No. 9360.2-02. Upon USEPA approval, the CPG will implement this long-term monitoring and O&M plan and will provide USEPA with documentation of all postremoval site control arrangements.

### 4.3 Final Report

Within 90 days after completion of all work required by this Removal Action, the CPG will submit for USEPA review and approval a final report summarizing the actions taken to comply with the AOC. The final report will conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC [on-scene coordinator] Reports."

The final report will include a good faith estimate of total costs or a statement of actual costs incurred in complying with the AOC, a listing of quantities and types of materials removed offsite or handled onsite, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the Removal Action (e.g., manifests, invoices, bills, contracts, and permits). The final report will also include the following certification signed by a person who supervised or directed the preparation of that report:

Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

### 4.4 Project Schedule

A project schedule that includes all major tasks and deliverables is included as **Appendix B**. The schedule provides approximate completion dates for the predesign, design, and implementation of the RM 10.9 Removal Action. It is assumed that the USEPA review period for each of the design submittals will have a duration of 20 calendar days. Effective and open communication will be critical to achieving the project's aggressive milestones. The status of ongoing efforts and issues that arise will be discussed during periodic teleconference or meetings.

Because of the uncertainty associated with the schedule for several tasks that are out of CPG's control (e.g., seasonal constraints and USEPA review periods), this schedule is approximate.



# Delivery and Implementation Strategy

## 5.1 Delivery and Implementation Strategy

In order to meet the RM 10.9 Removal Action implementation milestone of May 2013, it will be necessary to begin the procurement process in parallel with the design process. This “design-bid-build” approach will result in the selection of the contractors before the completion of the prefinal design, which allows the contractor to become an integral part of the design team and to have the contractors’ specific equipment/project approach incorporated into the prefinal and final design reports. Getting the construction contractors onboard during the design phase will allow the project to transition quickly to mobilization and subsequent implementation.

The RM 10.9 Removal Action will be performed by several contractors. Each of these contractors will be selected based on “best value” to the project. The selection process will begin during preparation of the BODR and will conclude during the prefinal design phase of the project. The selection process will include the following:

- ☐ Identification of qualified contractors
- ☐ Preparation and issuance of requests for proposals (RFPs)
- ☐ Evaluation and selection of contractors

### 5.1.1 Contractor Identification

Five engineering design packages will be developed for the RM 10.9 TCRA. These design packages will be either performance based or prescriptive. A performance-based design specifies a desired outcome but not the means and methods to achieve the outcome, whereas a prescriptive design specifies the means and methods that must be used to achieve the desired outcome. For each of these packages, potential contractors will be identified during the basis of design phase of the project. The vendors will be evaluated based on their experience, equipment availability, and health and safety records. An initial list of potential available contractors for each of the engineering design packages is provided in **Table 5-1**.

TABLE 5-1  
Engineering Design Packages

Design Approach	Scope	Preliminary List of Potential Contractors
<b><i>Dredging</i></b>		
Performance	Dredging	Jay Cashman
	Debris removal and segregation	D.A. Collins
	Transporting dredged material to the off-loading facility	Sevenson Environmental Weeks Marine
<b><i>Sediment Washing</i></b>		
Performance	Pumping, storing, treating, and discharging decant water from barges	Biogenesis
	Off-loading dredged material from the barges and transporting it to a sediment-receiving area	Pear Technology
	Preparing (removing debris, screening, and mixing) sediment for the sediment-washing process	
	Treating the sediment through the sediment-washing process	
	Storing, treating, and discharging wastewater from the sediment-washing process	
	Storing the treated sediment and other material (e.g., debris)	
	Loading the treated material and debris (separately) onto trucks for transport to the offsite disposal facility	

TABLE 5-1  
Engineering Design Packages

Design Approach	Scope	Preliminary List of Potential Contractors
<b>Stabilization</b>		
Performance	Pumping, storing, treating and discharge under regulatory permit decant water from barges Off-loading dredged material from the barges and transporting it to a sediment-receiving area Preparing (screening, mixing, and potential dewatering) sediment for stabilization Treating the sediment with reagents for stabilization of the sediment Storing the treated sediment Loading the treated material onto trucks for transport to the offsite disposal facility	Clean Earth Inc Jay Cashman
<b>Capping</b>		
Prescriptive	Chemical containment modeling Active layer treatability study Cap plan and typical cap sections (active layer, sand layer, geotextile barrier, and armor stone) design Erosion control design Cap placement criteria	Jay Cashman D.A. Collins Severson Environmental
<b>Transportation and Disposal</b>		
Prescriptive	Transportation (trucking or rail) Disposal	Heritage Environmental Services Clean Harbors, Inc. EQ Northeast, Inc. Chemical Waste Management

□

### 5.1.2 Requests for Proposal

For each of the engineering design packages, an RFP will be prepared based on the design information developed to date and containing the following information:

- Scope of work
  - Contractor's scope of work
  - Services provided by others
  - Site requirements and restrictions
  - Health and safety requirements
  - QC requirements
  - Regulatory/environmental compliance
  - Project control requirements
  - Work schedule
  - List of technical specifications and drawings
  - Measurement and payment
- Contract terms and conditions. At a minimum the contractor will be required to submit the following information with their proposal:



- ☐ Description and organizational chart of project team
- ☐ Previous project experience (name, location, description, client, contract price, completion date)
- ☐ Previous project performance (adherence to schedule/budget, compliance with permit requirements)
- ☐ Implementation strategy demonstrating an understanding of the contract scope of work
- ☐ Proposed schedule
- ☐ Description of equipment (ownership, type, size, condition, utilization, maintenance and repair program)
- ☐ Personnel experience (resumes of propose staff)
- ☐ Health and safety compliance (loss experience rates, experience modification rates, compliance history, content and scope of environmental health and safety [EHS] program(s), implementation of EHS program(s), qualifications and experience of EHS personnel, EHS training experience of project personnel, and substance abuse program)

Contractors will be permitted to provide proposals on more than one of the engineering design packages.

### 5.1.3 Evaluation/Selection Process

The proposals which are received will be evaluated by a technical evaluation board based on the technical criteria below:

- ☐ Project approach and ability to achieve the required schedule
- ☐ Performance on past projects, including health and safety
- ☐ Equipment type, size, condition, and availability
- ☐ EHS compliance
- ☐ Experience of personnel and health and safety certifications, including working with RCRA wastes
- ☐ Price

The technical evaluation will use a point system for each category. A technical evaluation board which will comprise individuals from the CPG, dmi, and CH2M HILL will then use the rating scale to score the bidders based on the point system established for each of the evaluation categories. The points from each category will be summed to get an individual score. The individual scores from each board member will then be totaled to arrive at an overall score for each contractor. Once selected, the contractor's equipment and project approach will be integrated into the final design report.

## 5.2 Project Organization

The proposed CH2M HILL Design Team includes individuals with the skill sets and sediment-specific experience needed to complete an effective design and implementation for the RM 10.9 TCRA. **Figure 5-1** shows the project organizational structure for the design, and **Table 5-2** lists the project's key personnel, their responsibilities, and their years of experience. The project organization will be revised accordingly for implementation and will be included in the CQCP to be submitted as part of the prefinal design report.

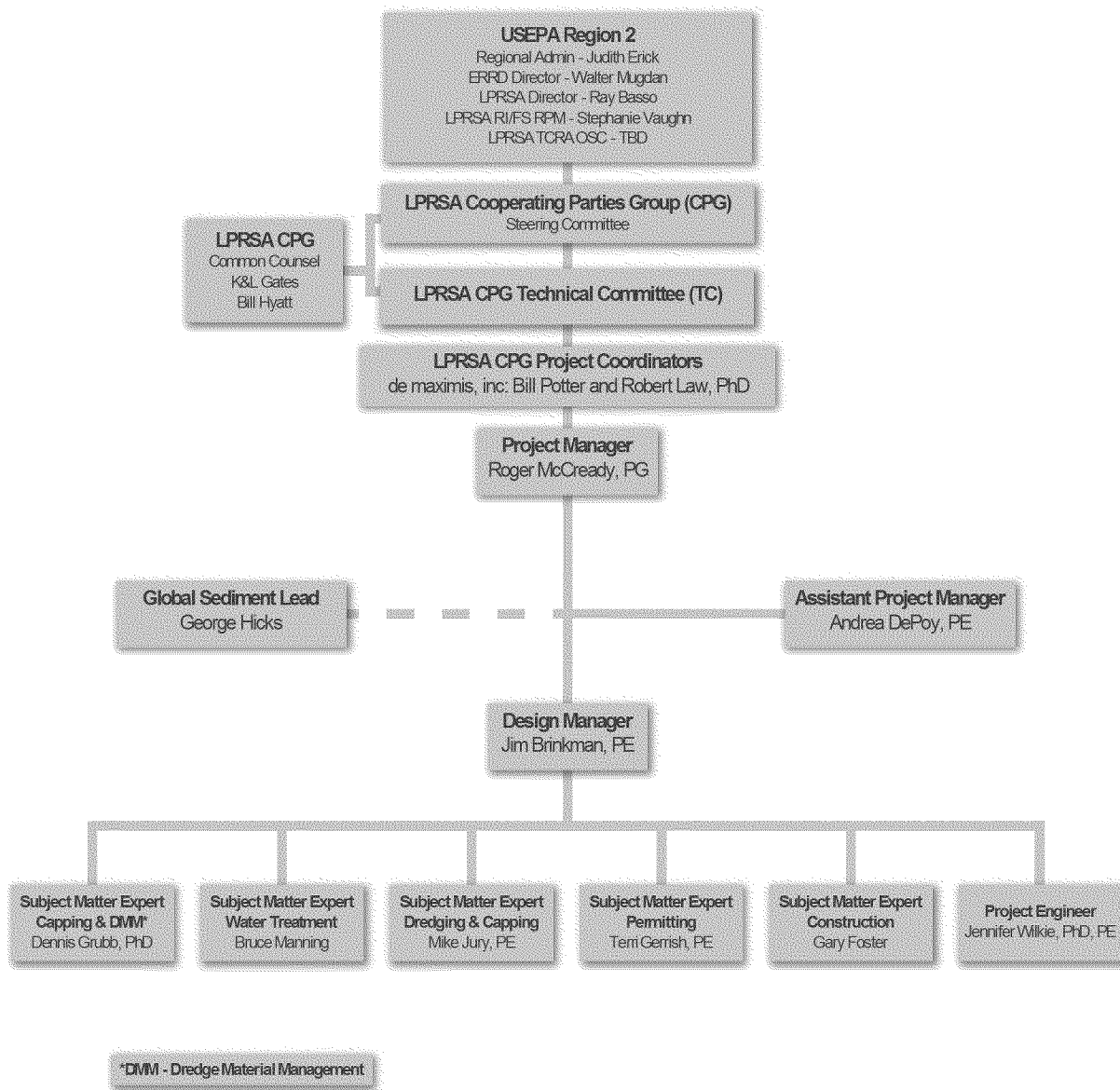
TABLE 5-2  
Key Personnel

Personnel	Role	Years of Experience
Roger McCready, PG	Project Manager	25
Jim Brinkman, PE	Design Manager	29
Mike Jury, PE	SME—Dredging and Capping	38
Dennis Grubb, PhD	SME—Capping and Dredge Material Management	20
George Hicks	Global Sediment Lead	30
Gary Foster	SME—Construction	31
Terri Gerrish, PE	SME—Permitting	32
Bruce Manning	SME—Water Treatment	35

TABLE 5-2  
**Key Personnel**

Personnel	Role	Years of Experience
Jennifer Wilkie, PhD, PE	Project Engineer	18
Andrea DePoy, PE	Assistant Project Manager	14

SME, subject matter expert.



**Figure 5-1**  
Project Organization Chart  
RM 10.9 Removal Action Design Work Plan  
Lower Passaic River Study Area, New Jersey

## SECTION 6

# References

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AECOM. Lower Passaic River Study Area River Mile 10.9 Characterization Quality Assurance Project Plan Addendum A - Sediment Collection for Bench-Scale Testing of Sediment Treatment and Dewatering Technologies and for Additional Delineation. May 2012

AECOM. Lower Passaic River Study Area River Mile 10.9 Characterization Quality Assurance Project Plan Addendum C - Data Gap Sample Collection to Support Sediment Removal and Sediment Capping Design. May 2012.

CH2M HILL and AECOM. 2011. River Mile 10.9 Characterization Program Summary, Lower Passaic River Study Area. Newark, New Jersey. April 19.

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USEPA (U.S. Environmental Protection Agency). 2012b. Action Memorandum/Enforcement: Determination of Need to Conduct a CERCLA Time Critical Removal Action at the Diamond Alkali Superfund Site, Lower Passaic River Study Area, River Mile 10.9 Removal Area.



**Appendix A**  
**Diamond Alkali, Lower Passaic River Study Area—**  
**River Mile 10.9 Administrative Settlement Agreement**  
**and Order on Consent for Removal Action, May 21,**  
**2012 (Effective June 18, 2012)**

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II  
290 BROADWAY  
NEW YORK, NEW YORK 10007-1866

June 18, 2012

BY EMAIL & OVERNIGHT DELIVERY

William H. Hyatt, Jr., Esq.  
K & L Gates LLP  
One Newark Center, Tenth Floor  
Newark, NJ 07102-5285

Re: Diamond Alkali, Lower Passaic River Study Area – River Mile 10.9  
Administrative Settlement Agreement and Order on Consent for Removal Action  
USEPA Region 2 CERCLA Docket No. 02-2012-2015

Dear Bill:

Enclosed please find the executed Administrative Settlement Agreement and Order on Consent for Removal Action ("Removal AOC"). The Removal AOC is effective today, June 18, 2012, the date it was signed by the US Environmental Agency ("EPA").

EPA thanks you and your colleagues, and all the Settling Parties, for all the work that has gotten us to this point. We look forward to working with the Settling Parties on the RM 10.9 removal action.

Sincerely yours,

A handwritten signature in black ink that reads "Sarah P. Flanagan".

Sarah P. Flanagan  
Assistant Regional Counsel

Enclosures

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 2

IN THE MATTER OF:

Lower Passaic River Study Area portion of  
the Diamond Alkali Superfund Site

In and About Essex, Hudson, Bergen and  
Passaic Counties, New Jersey

Arkema Inc.; Ashland Inc.; Atlantic  
Richfield Company; BASF Corporation, on  
its own behalf and on behalf of BASF  
Catalysts LLC; Belleville Industrial Center;  
Benjamin Moore & Co.; CBS Corporation, a  
Delaware corporation, f/k/a Viacom Inc.,  
successor by merger to CBS Corporation, a  
Pennsylvania corporation, f/k/a  
Westinghouse Electric Corporation; Chevron  
Environmental Management Company, for  
itself and on behalf of Texaco, Inc. and  
TRMI-H LLC; CNA Holdings LLC; Coats &  
Clark, Inc.; Coltec Industries; Conopco, Inc.  
d/b/a Unilever (as successor to  
CPC/Bestfoods, former parent of the Penick  
Corporation (facility located at 540 New  
York Avenue, Lyndhurst, NJ)); Cooper  
Industries, LLC; Covanta Essex Company;  
Croda Inc.; DII Industries, LLC; DiLorenzo  
Properties Company on behalf of itself and  
the Goldman /Goldman/DiLorenzo  
Properties Partnerships; E. I. du Pont de  
Nemours and Company; Eden Wood  
Corporation; Elan Chemical Company;  
EPEC Polymers, Inc. on behalf of itself and  
EPEC Oil Company Liquidating Trust;  
Essex Chemical Corporation; Exelis Inc. for  
itself and for ITT Corporation; Flexon  
Industries Corp.; Franklin-Burlington  
Plastics, Inc.; Garfield Molding Co., Inc.;  
General Electric Company; Givaudan

ADMINISTRATIVE SETTLEMENT  
AGREEMENT AND ORDER ON  
CONSENT FOR REMOVAL ACTION

U.S. EPA Region 2  
CERCLA Docket No. 02-2012-2015

Proceeding Under Sections 104, 106(a), 107  
and 122 of the Comprehensive  
Environmental Response, Compensation,  
and Liability Act, as amended, 42 U.S.C. §§  
9604, 9606(a), 9607 and 9622



Fragrances Corporation (Fragrances North America); Goodrich Corporation on behalf of itself and Kalama Specialty Chemicals, Inc.; Hess Corporation, on its own behalf and on behalf of Atlantic Richfield Company; Hexcel Corporation; Hoffmann-La Roche Inc. on its own behalf, and on behalf of its affiliate Roche Diagnostics; Honeywell International Inc.; ISP Chemicals LLC; Kao USA Inc.; Leemilt's Petroleum, Inc. (successor to Power Test of New Jersey, Inc.), on its behalf and on behalf of Power Test Realty Company Limited Partnership and Getty Properties Corp., the General Partner of Power Test Realty Company Limited Partnership; Legacy Vulcan Corp.; Linde LLC on behalf of The BOC Group, Inc.; Lucent Technologies Inc. now known as Alcatel-Lucent USA Inc.; Mallinckrodt Inc.; National-Standard LLC; Newell Rubbermaid Inc., on behalf of itself and its wholly-owned subsidiaries Goody Products, Inc. and Berol Corporation (as successor by merger to Faber-Castell Corporation); News Publishing Australia Ltd. (successor to Chris-Craft Industries); Novelis Corporation (f/k/a Alcan Aluminum Corporation); Otis Elevator Company; Pfizer, Inc.; Pharmacia Corporation (f/k/a Monsanto Company); PPG Industries, Inc.; Public Service Electric and Gas Company; Purdue Pharma Technologies, Inc.; Quality Carriers, Inc. as successor to Chemical Leaman Tank Lines, Inc. and Quality Carriers, Inc.'s corporate affiliates and parents; Reichhold, Inc.; Revere Smelting and Refining Corporation; Safety-Kleen Envirosystems Company by McKesson, and McKesson Corporation for itself; Sequa Corporation; Seton Tanning;

STWB Inc.; Sun Chemical Corporation; Tate & Lyle Ingredients Americas LLC (f/k/a A.E. Staley Manufacturing Company, including its former division Staley Chemical Company); Teva Pharmaceuticals USA, Inc. (f/k/a Biocraft Laboratories, Inc.); Teval Corporation; Textron Inc.; The Hartz Consumer Group, Inc., on behalf of The Hartz Mountain Corporation; The Newark Group; The Sherwin-Williams Company; Stanley Black & Decker, Inc.; Three County Volkswagen; Tiffany and Company; Vertellus Specialties Inc. f/k/a Reilly Industries, Inc.; Wyeth, on behalf of Shulton, Inc.

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## **I. JURISDICTION AND GENERAL PROVISIONS**

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("EPA") and the Settling Parties whose names are set forth in Appendix A ("Settling Parties"). This Settlement Agreement provides for the performance of a removal action, including removal of sediments, capping, bench-scale tests of sediment treatment and/or decontamination technologies, and, potentially, pilot-scale tests of sediment treatment and/or decontamination technologies, by Settling Parties, and Settling Parties' reimbursement of Future Response Costs incurred by EPA at or in connection with the Work to be performed under this Settlement Agreement in the Lower Passaic River Study Area ("LPRSA") portion of the Diamond Alkali Superfund Site (the "Site") generally located in and about Essex, Hudson, Bergen and Passaic Counties, New Jersey.

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622, as amended ("CERCLA").

3. EPA has notified the State of New Jersey (the "State") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

4. EPA and Settling Parties acknowledge that the Work required by this Settlement Agreement is an important step in addressing contamination of the Passaic River, and that any other response actions for the LPRSA and Newark Bay may be the subject of separate settlement agreements. EPA and Settling Parties retain any rights that they may have with respect to such response actions. The remedy selection process for any additional response actions for the LPRSA and Newark Bay will take into consideration the Work to be performed under this Settlement Agreement.

5. EPA and Settling Parties recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Settling Parties in accordance with this Settlement Agreement do not constitute an admission of any liability. Settling Parties do not admit, and retain the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the EPA findings of fact, conclusions of law, and determinations in Sections IV and V of this Settlement Agreement. Settling Parties agree to comply with and be bound by the terms of this Settlement Agreement and further agree that they will not contest the basis or validity of this Settlement Agreement or its terms.

## **II. PARTIES BOUND**

6. This Settlement Agreement applies to and is binding upon EPA and upon each of Settling Parties and their heirs, successors and assigns. Any change in ownership or corporate status of a Settling Party including, but not limited to, any transfer of assets or real or personal property shall not alter such Settling Party's responsibilities under this Settlement Agreement.

7. Settling Parties are jointly and severally liable for carrying out all activities required by this Settlement Agreement. In the event of the insolvency or other failure of any one or more Settling Parties to implement the requirements of this Settlement Agreement, the remaining Settling Parties shall complete all such requirements.

8. Settling Parties shall ensure that their contractors, subcontractors, and representatives receive a copy of this Settlement Agreement and comply with this Settlement Agreement. Settling Parties shall be responsible for any noncompliance with this Settlement Agreement.

9. Each undersigned representative of EPA and the Settling Parties certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to execute and legally bind EPA or Settling Parties, as the case may be, to this Settlement Agreement.

### **III. DEFINITIONS**

10. Unless otherwise expressly provided in this Settlement Agreement, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "Action Memorandum/Enforcement" shall mean the EPA Action Memorandum relating to the Site signed on May 21, 2012, by the Regional Administrator, EPA Region 2, or his/her delegate, and all attachments thereto. The Action Memorandum/Enforcement is attached as Appendix B.

b. "Administrative Record" shall mean the administrative record established by EPA pursuant to Section 113(k) of CERCLA, 42 U.S.C. § 9613(k) supporting the response action that is the subject of this Settlement Agreement.

c. "Bench-Scale Tests" shall mean, individually and collectively, the bench-scale tests described in the SOW. The Bench-Scale Tests are intended to provide sufficient information for the Settling Parties to determine whether to undertake Pilot-Scale Tests.

d. "Bench-Scale Test Report" shall mean the report submitted to EPA by the Settling Parties upon completion of the Bench-Scale Tests.

e. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

f. "CPG" shall mean the Lower Passaic River Study Area Cooperating Parties Group. The Settling Parties are members of the CPG.

g. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

h. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXXII.

i. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

j. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs on or after the Effective Date in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Paragraph 32 (costs and attorneys fees and any monies paid to secure access, including the amount of just compensation), Paragraph 42 (emergency response), and Paragraph 67 (work takeover). Future Response Costs shall not include costs incurred by EPA in considering or implementing any response actions other than the Work. Further, any costs incurred by EPA in implementing, overseeing, or enforcing this Settlement Agreement in excess of \$1,500,000, are not included within the definition of Future Response Costs; however, this shall not limit in any way the costs that the United States may incur implementing, overseeing, or enforcing this Settlement Agreement, and recover pursuant to any separate agreement, order, judicial proceeding, or other such mechanism.

k. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

l. "Lower Passaic River Study Area" or "LPRSA" shall mean that portion of the Passaic River encompassing the 17-mile stretch of the Passaic River and its tributaries from Dundee Dam to Newark Bay located in and about Essex, Hudson, Bergen and Passaic Counties, New Jersey. The LPRSA is part of the Site, as hereinafter defined.

m. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

n. "NJDEP" shall mean the New Jersey Department of Environmental Protection and any successor departments or agencies of the State.

o. "OSC" shall mean the On-Scene Coordinator designated by EPA pursuant to Paragraph 16 of this Settlement Agreement.

p. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral.

q. "Parties" shall mean EPA and Settling Parties.

r. "Pilot-Scale Tests" shall mean, individually and collectively, the pilot-scale tests that Settling Parties decide to undertake as described in the SOW.

s. "RI/FS Settlement Agreement" shall mean the Administrative Settlement Agreement and Order on Consent for Remedial Investigation and Feasibility Study, U.S. EPA Region 2, CERCLA Docket No. 02-2007-2009, effective May 8, 2007.

t. "RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.* (also known as the Resource Conservation and Recovery Act).

u. "RM 10.9 QAPP" shall mean the Quality Assurance Project Plan, RM 10.9 Characterization, Lower Passaic River Restoration Project, Revision 3, October 2011 (AECOM, 2011).

v. "RM 10.9 Removal Area" shall mean the approximately 5-acre area in the LPRSA within the RM 10.9 Study Area that is the subject of the Work to be performed under this Settlement Agreement. A figure showing the RM 10.9 Removal Area is attached as Appendix C.

w. "RM 10.9 Study Area" shall mean the area of sediments on the eastern side of the LPRSA that extends approximately 2,380 feet from RM 10.65 to RM 11.1, along an inside bend of the river upstream of the Delesse-Avondale Street Bridge and that includes the mudflat and point bar in the eastern half of the river channel.

x. "RPM" shall mean the Remedial Project Manager currently designated by EPA under Paragraph 34 of the RI/FS Settlement Agreement, or his or her successor or successors.

y. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.

z. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXXI). In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.

aa. "Settling Parties" shall mean those Parties identified in Appendix A, as amended from time to time, and their heirs, successors and assigns. Settling Parties are also signatories to the RI/FS Settlement Agreement.

bb. "Site" shall have the meaning provided for in Paragraph 14(ff) of the RI/FS Settlement Agreement.

cc. "State" shall mean the State of New Jersey.

dd. "Statement of Work" or "SOW" shall mean the statement of work for implementation of the removal action in the RM 10.9 Removal Area, as set forth in Appendix D to

this Settlement Agreement, and any modifications made thereto in accordance with this Settlement Agreement.

ee. "Waste Material" shall mean 1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

ff. "Work" shall mean all activities Settling Parties are required to perform under this Settlement Agreement, except those required by Section XI (Record Retention).

#### **IV. EPA FINDINGS OF FACT**

11. EPA makes the following findings of fact:

a. Since at least the early 1800s, the LPRSA has been a highly industrialized waterway, receiving direct and indirect discharges from numerous industrial facilities, as well as discharges and bypasses from sewage treatment facilities and surface water runoff.

b. In 1983, hazardous substances were detected at various locations in Newark, New Jersey, including the Diamond Alkali facility located at 80 Lister Avenue.

c. EPA, pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, placed the Diamond Alkali Superfund Site on the National Priorities List, which is set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 21, 1984, 49 Fed. Reg. 37070. EPA has issued a General Notice Letter to each of the Settling Parties, as well as other persons who are not Settling Parties, identifying them as being potentially liable under CERCLA for the Site.

d. Pursuant to Administrative Orders on Consent with NJDEP, Diamond Shamrock Chemicals Company conducted investigations and response work for the 80 and 120 Lister Avenue portion of the Diamond Alkali Superfund Site. The investigation included the sampling and assessment of sediment contamination within the Passaic River.

e. Sampling and assessment of sediments in the lower reaches of the Passaic River revealed the presence of many hazardous substances including, but not limited to, polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (collectively, "PCDDs/PCDFs"), polychlorinated biphenyls ("PCBs"), polyaromatic hydrocarbons ("PAHs"), dichlorodiphenyl-trichloroethate ("DDT"), dieldrin, chlordane, mercury, cadmium, copper, and lead.

f. EPA issued a Record of Decision ("ROD") that set forth an interim remedy for the 80 and 120 Lister Avenue portion of the Diamond Alkali Superfund Site on September 30, 1987. Pursuant to a judicial Consent Decree with EPA and NJDEP, Occidental Chemical Corporation and Chemical Land Holdings, Inc. (now known as Tierra Solutions, Inc.), which had acquired the property shortly before the 1986 stock transaction and was a party to the Consent Decree for specific, limited purposes, agreed to implement the 1987 ROD. The interim remedy was completed in 2004.

g. Occidental Chemical Corporation, as successor to Diamond Shamrock Chemicals Company, executed an Administrative Order on Consent ("AOC"), Index No. II-CERCLA-0117 with EPA to investigate a six-mile stretch of the Passaic River whose southern boundary was the abandoned Conrail Railroad bridge located at the U.S. Army Corps of Engineers ("USACE") station designation of 40+00 to a transect six miles upriver located at the USACE station designation of 356+80. The primary objectives of the investigation were to determine: (1) the spatial distribution and concentration of hazardous substances, both horizontally and vertically in the sediments; (2) the primary human and ecological receptors of contaminated sediments; and (3) the transport of contaminated sediment.

h. The sampling results from the investigation of the six-mile area and other environmental studies demonstrated that evaluation of a larger area was necessary because sediments contaminated with hazardous substances and other potential sources of hazardous substances are present along at least the entire LPRSA. Further, the tidal nature of the Lower Passaic River has resulted in greater dispersion of hazardous substances.

i. Sampling results show concentrations of PCDDs/PCDFs, PCBs, mercury, and other substances that in some areas significantly exceed the levels that can produce toxic effects to biota. Based on the results of monitoring and research undertaken since the mid-1970s, the State of New Jersey has taken a number of steps, in the form of consumption advisories, closures, and sales bans, to limit the exposure of the fish-eating public to toxic contaminants in the lower Passaic River, Newark Bay, the Hackensack River, the Arthur Kill and the Kill Van Kull. The initial measures prohibited the sale, and advised against the consumption, of several species of fish and eel and were based on the presence of PCB contamination in the seafood. The discovery of widespread dioxin contamination in the LPRSA and Newark Bay led the State of New Jersey to issue a number of fish consumption advisories in 1983 and 1984 which prohibited the sale or consumption of all fish, shellfish, and crustaceans from the LPRSA. These State fish advisories and prohibitions are still in effect.

j. EPA commenced a remedial investigation and feasibility study ("RI/FS") encompassing the 17-mile LPRSA. In May 2007, the CPG entered into the RI/FS Settlement Agreement, under which it agreed to complete the RI/FS for the LPRSA. The work pursuant to the RI/FS Settlement Agreement is ongoing under the direction and oversight of EPA. The RI/FS is being performed under CERCLA and has been coordinated with the USACE and the New Jersey Department of Transportation, its local sponsor until 2009, and NJDEP under the authority of the Water Resources Development Act ("WRDA") in order to identify and address water quality improvement, remediation, and restoration opportunities in the LPRSA. Further, the federal and State Natural Resource Trustees (the Fish and Wildlife Service of the U.S. Department of the Interior, the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce, and NJDEP) have provided input to the process. Concurrently, EPA is performing a Focused Feasibility Study with respect to an eight-mile portion of the LPRSA.

k. Although the LPRSA ends at the mouth of Passaic River, because of the tidal nature of the Passaic River, there is reason to believe that the areal extent of contamination extends beyond that boundary. Consequently, in order to determine more accurately the boundaries of



contamination from the area studied originally under the AOC, in February 2004, EPA and Occidental Chemical Corporation entered into an AOC to perform an RI/FS for Newark Bay. This RI/FS is also ongoing.

l. As part of the RI/FS for the LPRSA, EPA and the Settling Parties have collected and analyzed sediment samples throughout the LPRSA.

m. Sediment samples collected in the RM 10.9 Study Area suggested that significantly elevated concentrations of PCDDs/PCDFs, PCBs, mercury, PAHs and other contaminants might be present in this area. In April 2011, Settling Parties proposed and EPA agreed that Settling Parties would undertake additional sampling and analysis, and perform bathymetry and hydrodynamic survey work, to characterize and develop information about the extent of contamination in the RM 10.9 Study Area. The data from the samples collected by Settling Parties confirmed that portions of the sediment located in the RM 10.9 Study Area, which includes a mudflat on the eastern shore of the Passaic River that is exposed at low tide, contains significantly elevated concentrations of PCDDs/PCDFs, PCBs, mercury, PAHs and other hazardous substances. In the first six inches of sediment, peak concentrations detected include 2,3,7,8-TCDD at 21.6 parts per billion ("ppb"), PCBs at 34 parts per million ("ppm"), mercury at 22 ppm and high molecular weight PAHs at 510 ppm. These concentrations represent some of the highest surface concentrations observed in the Passaic River. Elevated concentrations of PCDDs/PCDFs, PCBs and mercury are generally co-located in surface and subsurface sediments.

n. A park owned by Bergen County is located on the eastern shore of the River at the RM 10.9 Study Area, directly adjacent to the mudflat that forms part of the highly contaminated area of sediment. Individuals utilizing the River, including boaters, waders and anglers, could be exposed to the sediments. The sediment at the surface is also exposed to erosion and resuspension and thus may act as a source of contamination to other parts of the river, including the lower eight miles.

## **V. EPA CONCLUSIONS OF LAW AND DETERMINATIONS**

12. Based on the EPA Findings of Fact set forth above, and the Administrative Record supporting the response action to which this settlement applies, EPA has determined that:

a. The LPRSA is a "facility" as defined in Section 101(9) of CERCLA, § 9601(9).

b. The contamination found at the RM 10.9 Study Area includes "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a).

c. The conditions in the sediments at the RM 10.9 Study Area meet a number of the specific factors identified in 40 CFR Part 300.415(b)(2) for EPA to consider in determining the appropriateness of a removal action, including, but not limited to:

i. an actual or potential release of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs, exposing nearby human populations, animals or the food chain (40 CFR §300.415(b)(2)(i));

ii. actual or potential contamination of sensitive ecosystems due to the presence of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs (40 CFR §300.415(b)(2)(ii)); and

iii. high levels of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs, present at or near the surface of the sediment that could migrate or be released due to weather and/or hydrologic conditions (40 CFR §300.415(b)(2)(iv)-(v)).

d. The response action to be performed pursuant to this Settlement Agreement is a removal action, pursuant to Section 101(23) of CERCLA, 42 U.S.C. 9601(23).

e. Due to the time-critical nature of this removal action an Engineering Evaluation/Cost Analysis will not be prepared.

f. The implementation of the removal action will contribute to the efficient performance of any anticipated long-term remedial action, by reducing the inventory of contaminated sediments in the Passaic River, reducing the resuspension of contaminated sediments, and providing an opportunity for Bench-Scale Tests and Pilot-Scale Tests. Data obtained from the monitoring of the protective cap, the Bench-Scale Tests of treatment and/or decontamination technologies, and if conducted, the Pilot-Scale Tests of treatment and/or decontamination technologies, may help inform the remedy selection process for the LPRSA and Newark Bay.

g. Each Settling Party is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

h. Each Settling Party is a responsible party under one or more subsections of Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

i. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from a facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a).

j. The removal action required by this Settlement Agreement is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement Agreement, will be consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP. EPA has determined that the removal action will be done properly by Settling Parties and that it is in the public interest pursuant to Sections 104(a)(1) and 122(a) of CERCLA, 42 U.S.C. §§ 9401(a)(1) and 9622(a).

k. The removal and capping activities required by this Settlement Agreement are determined to be on-site for purposes of Section 121(e)(1) of CERCLA, 42 U.S.C. § 9621(e)(1).

l. Settling Parties have agreed to perform the Work and pay Future Response Costs as set forth in this Settlement Agreement and the SOW.

## **VI. SETTLEMENT AGREEMENT AND ORDER**

13. Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this response action, it is hereby Ordered by EPA and Agreed between Settling Parties and EPA that Settling Parties shall comply with all provisions of this Settlement Agreement, including, but not limited to, all attachments to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

## **VII. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR**

14. Settling Parties shall retain one or more contractors to perform the Work and shall notify EPA of the name(s) and qualifications of such contractor(s) within ten (10) days of the Effective Date. Settling Parties shall also notify EPA of the name(s) and qualification(s) of any other contractor(s) or subcontractor(s) retained to perform the Work at least 21 days prior to commencement of such Work. EPA retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Settling Parties. If EPA disapproves in writing of any selected contractor, Settling Parties shall retain a different contractor and shall notify EPA of that contractor's name and qualifications within 14 days of EPA's disapproval. Any proposed contractor must demonstrate compliance with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan (QMP). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01-002, March 2001) or equivalent documentation as determined by EPA.

15. Within 10 days after the Effective Date, Settling Parties shall designate a Project Coordinator who shall be responsible for administration of all actions by Settling Parties required by this Settlement Agreement and shall submit to EPA the designated Project Coordinator's name, address, telephone number, and qualifications. To the greatest extent practicable, the Project Coordinator shall be present on Site or readily available during the conduct of the work at RM 10.9 Removal Area. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the designated Project Coordinator, Settling Parties shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number, and qualifications within 10 days following EPA's disapproval. Receipt by Settling Parties' Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by all Settling Parties.

16. After the Effective Date of the Settlement Agreement, EPA may designate an On-Scene Coordinator ("OSC") from the Removal Action Branch in the Emergency and Remedial Response

Division, Region 2 to oversee the Work. At EPA's discretion, the OSC will work collaboratively with the Remedial Project Manager ("RPM") to provide field oversight of the Work and review plans, reports and other documents submitted by Settling Parties.

17. EPA and Settling Parties shall have the right, subject to Paragraph 15, to change their respective designated OSC, RPM or Project Coordinator. Settling Parties shall notify EPA 10 days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notice. EPA will notify Settling Parties in writing of a change of its designated OSC or RPM, if possible 10 days before such a change.

### **VIII. WORK TO BE PERFORMED**

18. Settling Parties shall perform all actions necessary to implement the SOW. The actions to be implemented generally include, but are not limited to, the removal and capping of sediments at the RM 10.9 Removal Area, the Bench-Scale Tests, and potentially the Pilot-Scale Tests. The Work shall be implemented as set forth in the SOW, which is attached as Appendix D.

19. Work Plan and Implementation. Within 45 days after the Effective Date Settling Parties shall submit to EPA a work plan for the performance of the sediment removal and capping, combined with a basis of design report ("Removal/Capping Work Plan/BODR"). Once approved, or approved with modifications, the Removal/Capping Work Plan/BODR, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement Agreement.

- a. The Removal/Capping Work Plan/BODR shall include plans and an expeditious schedule for implementation of all removal and capping tasks identified in the SOW.
- b. Upon approval of the Removal/Capping Work Plan/BODR by EPA, Settling Parties shall implement the activities required under such Work Plan. Settling Parties shall submit to EPA all plans, submittals, or other deliverables required under each such approved Removal/Capping Work Plan/BODR in accordance with the approved schedule for EPA's review and approval. Settling Parties shall not commence any Work except in conformance with the terms of this Settlement Agreement. Settling Parties shall not commence implementation of any Work Plan developed hereunder until receiving written EPA approval.

20. Bench-Scale Testing. Within 1 day after the Effective Date, Settling Parties shall submit the Bench-Scale Test Quality Assurance Project Plan ("QAPP") for each sediment treatment vendor that will conduct Bench-Scale Tests as described in the SOW. Within 90 days after EPA has received the Bench-Scale Test QAPPs, Settling Parties shall submit to EPA the Bench-Scale Test Report, as set forth in the SOW.

21. Health and Safety Plan. Within 30 days after the Effective Date, Settling Parties shall submit for EPA review and comment a plan that ensures the protection of the public health and safety during performance of Work under this Settlement Agreement. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June

1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Settling Parties shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the removal action. Settling Parties may submit an amendment to the Health and Safety Plan submitted pursuant to the RI/FS Settlement Agreement to satisfy this requirement.

## 22. Quality Assurance and Sampling.

a. Settling Parties shall use quality assurance, quality control, and chain of custody procedures for all Bench-Scale Test, design, compliance, and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R5)" (EPA/240/B-01/003, March 2001, reissued May 2006), "Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/240/R-02/009, December 2002), and subsequent amendments to such guidelines upon notification by EPA to Settling Parties of such amendment. Amended guidelines shall apply only to procedures conducted after such notification.

b. Prior to the commencement of any sampling or monitoring project under this Settlement Agreement, Settling Parties shall submit to EPA for approval a QAPP that is consistent with the SOW and the NCP. Any such QAPP may take the form of an addendum to the RM 10.9 QAPP, or other approved QAPP for LPRSA sampling. Settling Parties shall ensure that EPA personnel and its authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Parties in implementing this Settlement Agreement. Settling Parties shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Settlement Agreement perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods that are documented in the "USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4," and the "USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2," and any amendments made thereto during the course of the implementation of this Settlement Agreement; however, upon approval by EPA, Settling Parties may use other analytical methods that are as stringent as or more stringent than the CLP-approved methods. Settling Parties shall ensure that all laboratories they use for analysis of samples taken pursuant to this Settlement Agreement participate in an EPA or EPA-equivalent quality assurance/quality control ("QA/QC") program. Settling Parties shall use only laboratories that have a documented Quality System that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001, reissued May 2006) or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements. Settling Parties shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Settlement Agreement are conducted in accordance with the procedures set forth in the QAPP approved by EPA.

23. Upon request, Settling Parties shall allow split or duplicate samples to be taken by EPA or its authorized representatives. Settling Parties shall notify EPA not less than 14 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. EPA shall have the right to collect additional samples, in which case EPA will notify Settling Parties and upon request, allow split or duplicate samples to be taken by Settling Parties if the Settling Parties are able to do so in a timely manner.

24. Settling Parties shall submit to EPA copies of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Settling Parties with respect to the Site and/or the implementation of this Settlement Agreement unless EPA agrees otherwise.

25. Notwithstanding any provision of this Settlement Agreement, EPA retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

26. Community Involvement. EPA will conduct community involvement activities in accordance with the Lower Passaic River Restoration Project and Newark Bay Study Final Community Involvement Plan (June 2006) ("CIP"). Although implementation of the CIP is the responsibility of EPA, Settling Parties shall assist by providing information for dissemination to the public and participating in public meetings. The extent of Settling Parties' involvement in community involvement activities is left to the discretion of EPA. All Settling Parties-conducted community involvement activities pursuant to the CIP will be subject to oversight by EPA.

27. Removal and Capping Monitoring and Operation and Maintenance Plan. In accordance with the Removal/Capping Work Plan schedule, or as otherwise directed by EPA, Settling Parties shall submit a Long-Term Monitoring and Operation and Maintenance Plan, which shall meet the requirements for post-removal site control consistent with Section 300.415(I) of the NCP and OSWER Directive No. 9360.2-02. Upon EPA approval, Settling Parties shall implement such Plan and shall provide EPA with documentation of all post-removal site control arrangements.

28. Reporting.

a. Settling Parties shall submit a monthly written progress report to EPA concerning actions undertaken pursuant to this Settlement Agreement by the 15th day of the following month, commencing after the date of receipt of EPA's approval of the Work Plan until termination of this Settlement Agreement, unless otherwise directed in writing by the RPM. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

b. Settling Parties shall submit copies of all plans, reports or other submissions required by this Settlement Agreement, the Statement of Work, or any approved work plan, in electronic form or, upon request, in paper form. One copy of each report shall be submitted to the following:

U.S. Environmental Protection Agency  
2890 Woodbridge Avenue  
Edison, New Jersey 08837  
Attn: Lower Passaic River Study Area On-Scene Coordinator

Emergency and Remedial Response Division  
 U.S. Environmental Protection Agency, Region 2  
 290 Broadway, 19th Floor  
 New York, New York 10007-1866  
 Attn: Lower Passaic River Study Area Remedial Project Manager

Office of Regional Counsel  
 U.S. Environmental Protection Agency, Region 2  
 290 Broadway, 17th Floor  
 New York, New York 10007-1866  
 Attn: Lower Passaic River Study Area Site Attorney

New Jersey Department of Environmental Protection  
 Site Remediation Program  
 401 E. State Street  
 P.O. Box 028  
 Trenton, New Jersey 08265-0028  
 Attn: Lower Passaic River Study Area Project Manager

29. Final Report. Within 90 days after completion of all Work required by this Settlement Agreement, Settling Parties shall submit for EPA review and approval a final report summarizing the actions taken to comply with this Settlement Agreement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports." The final report shall include a good faith estimate of total costs or a statement of actual costs incurred in complying with the Settlement Agreement, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a person who supervised or directed the preparation of that report:

"Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

### 30. Off-Site Shipments.

a. Settling Parties shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to the OSC and RPM. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

i. Settling Parties shall include in the written notification the following information: 1) the name and location of the facility to which the Waste Material is to be shipped; 2) the type and quantity of the Waste Material to be shipped; 3) the expected schedule for the shipment of the Waste Material; and 4) the method of transportation. Settling Parties shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

ii. The identity of the receiving facility and state will be determined by Settling Parties following the award of any contract for the removal and off-Site disposal of Waste Material. Settling Parties shall provide the information required by Paragraph 30(a) and 30(b) as soon as practicable after the award of any such contract and before the Waste Material is actually shipped.

b. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-Site location, Settling Parties shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Settling Parties shall only send hazardous substances, pollutants, or contaminants from the Site to an off-Site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

## **IX. SITE ACCESS**

31. If any portion of the Site, or any other property where access is needed to implement this Settlement Agreement, is owned or controlled by any of the Settling Parties, such Settling Parties shall, commencing on the Effective Date, provide EPA and the State, and their representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

32. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Settling Parties, Settling Parties shall use their best efforts to obtain all necessary access agreements within 30 days after the Effective Date, or as otherwise specified in writing by the RPM. Settling Parties shall immediately notify EPA if after using their best efforts they are unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Settling Parties shall describe in writing their efforts to obtain access. If Settling Parties cannot obtain access agreements, EPA may either obtain access for Settling Parties, or assist Settling Parties in gaining access, to the extent necessary to effectuate the response actions described in this Settlement Agreement, using such means as EPA deems appropriate. Settling Parties shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XV (Payment of Response Costs).

33. Notwithstanding any provision of this Settlement Agreement, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.



## **X. ACCESS TO INFORMATION**

34. Settling Parties shall provide to EPA, upon request, copies of all non-privileged documents and information within their possession or control or that of their contractors or agents relating to the Work or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Settling Parties shall also make available to EPA, at reasonable times and places, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

35. Settling Parties may assert business confidentiality claims covering part or all of the documents or information submitted to EPA under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA, or if EPA has notified Settling Parties that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Settling Parties. Settling Parties shall segregate and clearly identify all documents and information submitted under this Settlement Agreement for which Settling Parties assert confidentiality claims.

36. Settling Parties may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Parties assert such a privilege in lieu of providing documents, they shall provide EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by Settling Parties. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

37. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

## **XI. RECORD RETENTION**

38. Until 6 years after Settling Parties' receipt of EPA's notification pursuant to Section XXIX (Notice of Completion of Work), each Settling Party shall preserve and retain at least one copy of all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until 6 years after Settling Parties' receipt of EPA's notification pursuant to Section XXIX (Notice of Completion of Work),

Settling Parties shall also instruct their contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to performance of the Work.

39. At the conclusion of this document retention period, Settling Parties shall notify EPA at least 90 days prior to the destruction of any such records or documents, and, upon request by EPA, Settling Parties shall deliver any such records or documents to EPA. Settling Parties may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Settling Parties assert such a privilege, they shall provide EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or information; and 6) the privilege asserted by Settling Parties. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

40. Each Settling Party hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, and except for the documents listed on Appendix F, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA or the State or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

## **XII. COMPLIANCE WITH OTHER LAWS**

41. Settling Parties shall perform all actions required pursuant to this Settlement Agreement in accordance with all applicable state and federal laws and regulations except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). No local, state or federal permits shall be required for any portion of the Work conducted entirely on-Site (which means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action) if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. If any portion of the Work is to be conducted off-Site and requires a federal or state permit or approval, Settling Parties shall submit timely and complete applications and take all other action necessary to obtain and comply with such permits or approvals. In accordance with 40 C.F.R. § 300.415(j), all on-Site actions required pursuant to this Settlement Agreement shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements ("ARARs") under federal environmental or state environmental or facility siting laws. Settling Parties shall identify ARARs in the Removal and Capping Work Plan/BODR subject to EPA approval.

## **XIII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES**

42. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the RM 10.9 Study Area that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling

Parties shall immediately take all appropriate action. Settling Parties shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Settling Parties shall also immediately notify the OSC, or, in the event of his/her unavailability, the EPA Regional Emergency 24-hour telephone number 732-548-8730 of the incident or RM 10.9 Study Area conditions. In the event that Settling Parties fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Settling Parties shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XV (Payment of Response Costs).

43. In addition, in the event of any release of a hazardous substance from the RM 10.9 Study Area, Settling Parties shall immediately notify the OSC at 732-548-8730 and the National Response Center at (800) 424-8802. Settling Parties shall submit a written report to EPA within 7 days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

#### **XIV. AUTHORITY OF ON-SCENE COORDINATOR**

44. The OSC shall be responsible for overseeing Settling Parties' implementation of this Settlement Agreement, assisted by the RPM. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement, or to direct any other removal action undertaken at the RM 10.9 Removal Area. Absence of the OSC from the RM 10.9 Removal Area shall not be cause for stoppage of work unless specifically directed by the OSC. If EPA does not designate an OSC pursuant to Paragraph 16, the RPM shall have the authority lawfully vested in an OSC by the NCP, and this Settlement Agreement.

#### **XV. PAYMENT OF RESPONSE COSTS**

##### **45. Payments for Future Response Costs.**

a. Settling Parties shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Settling Parties a bill requiring payment that includes a Regionally-prepared cost summary, which includes direct and indirect costs incurred by EPA and its contractors. Settling Parties shall make all payments within 30 days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 47 of this Settlement Agreement.

b. Settling Parties shall make all payments required by this Paragraph by wire transfer directed to the Federal Reserve Bank of New York with the following information:

ABA = 021030004

Account = 68010727

SWIFT address = FRNYUS33

33 Liberty Street

New York NY 10045

Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

c. At the time of payment, Settling Parties shall send notice that payment has been made, referencing the name and address of the party making payment, Docket No. CERCLA-02-2012-2015 and EPA Site/Spill ID number 02-96 to:

Emergency and Remedial Response Division  
U.S. Environmental Protection Agency, Region 2  
290 Broadway, 19th Floor  
New York, New York 10007-1866  
Attn: Lower Passaic River Study Area Remedial Project Manager

Office of Regional Counsel  
U.S. Environmental Protection Agency, Region 2  
290 Broadway, 17th Floor  
New York, New York 10007-1866  
Attn: Lower Passaic River Study Area Site Attorney

U.S. Environmental Protection Agency  
Cincinnati Finance Office  
26 Martin Luther King Drive  
Cincinnati, Ohio 45268  
Attn: Finance (Richard Rice)  
[acctsreceivable.cinwd@epa.gov](mailto:acctsreceivable.cinwd@epa.gov)

d. The total amount to be paid by Settling Parties pursuant to Paragraph 45(a) shall be deposited by EPA in the Diamond Alkali Site/Lower Passaic River Study Area Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

46. In the event that payments for Future Response Costs are not made within 30 days of Settling Parties' receipt of a bill, Settling Parties shall pay Interest on the unpaid balance. The Interest on Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Settling Parties' failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XVIII.

47. Settling Parties may contest payment of any Future Response Costs billed under Paragraph 45 if they determine that EPA has made a mathematical error or has allocated the costs to the wrong Operable Unit account, or if they believe EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP or outside the definition of Future Response Costs. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the RPM and the Site attorney. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Settling Parties shall within the 30-day period pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 45. Simultaneously, Settling Parties shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of New Jersey and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Settling Parties shall send to the RPM and the Site attorney a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Settling Parties shall initiate the Dispute Resolution procedures in Section XVI (Dispute Resolution). If EPA prevails in the dispute, within 5 days of the resolution of the dispute, Settling Parties shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 45. If Settling Parties prevail concerning any aspect of the contested costs, Settling Parties shall pay that portion of the costs (plus associated accrued interest) for which it did not prevail to EPA in the manner described in Paragraph 45. Settling Parties shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XVI (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Settling Parties' obligation to reimburse EPA for its Future Response Costs.

## **XVI. DISPUTE RESOLUTION**

48. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

49. If Settling Parties object to any EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, they shall notify EPA in writing of their objection(s) within 14 days of such action, unless the objection(s) has/have been resolved informally. EPA and Settling Parties shall have 30 days from EPA's receipt of Settling Parties' written objection(s) to resolve the dispute through formal negotiations (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted orally but must be confirmed in writing.

50. Any agreement reached by the parties pursuant to this Section shall be in writing and shall, upon signature by both parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, the Director, Emergency and Remedial Response Division, will issue a written decision on the dispute to Settling Parties. EPA's decision shall be incorporated into and become an enforceable

part of this Settlement Agreement. Settling Parties' obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Settling Parties shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

## **XVII. FORCE MAJEURE**

51. Settling Parties agree to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed or prevented by a *force majeure*. For purposes of this Settlement Agreement, a *force majeure* is defined as any event arising from causes beyond the control of Settling Parties, or of any entity controlled by Settling Parties, including but not limited to their contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Settling Parties' best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work, increased cost of performance, or a failure to attain performance standards/action levels set forth in the Action Memorandum/Enforcement.

52. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Settling Parties shall notify EPA orally within 48 hours of when Settling Parties first knew that the event might cause a delay in or prevent performance. Within five (5) days thereafter, Settling Parties shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Settling Parties' rationale for attributing such delay to a *force majeure* event if they intend to assert such a claim; and a statement as to whether, in the opinion of Settling Parties, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Settling Parties from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

53. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify Settling Parties in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will notify Settling Parties in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

## **XVIII. STIPULATED PENALTIES**

54. Settling Parties shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 55 and 56 for failure to comply with the requirements of this Settlement Agreement

specified below, unless excused under Section XVII (*Force Majeure*). "Compliance" by Settling Parties shall include completion of the activities under this Settlement Agreement or any work plan or other plan approved under this Settlement Agreement identified below in accordance with all applicable requirements of law, this Settlement Agreement, the SOW, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

55. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 55(b):

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$1,500.00	1st through 14th day
\$2,500.00	15th through 30th day
\$5,000.00	31st day and beyond

b. Compliance Milestones

- Submittal of Removal and Capping Work Plan (Paragraph 19)
- Submittal of Removal and Capping Monitoring and Operation and Maintenance Plan (Paragraph 27)
- Compliance with Work Milestones as Identified in the SOW

56. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports or other written documents pursuant to Paragraphs 28 and 29:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$500.00	1st through 14th day
\$1,500.00	15th through 30th day
\$2,500.00	31st day and beyond

57. In the event that EPA assumes performance of a substantial portion or all of the Work pursuant to Paragraph 67 of Section XX, Settling Parties shall be liable for a stipulated penalty in the amount of \$5,000,000. EPA agrees that any penalty assessed against Settling Parties under this Paragraph shall be reduced, if appropriate, by the percentage of Work completed by Settling Parties. This paragraph shall not apply to circumstances described in Paragraph 32 of the Settlement Agreement in which EPA performs Work because Settling Parties are unable to obtain access.

58. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: 1) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Parties of any deficiency; and 2) with respect to a decision by the Director,

Emergency and Remedial Response Division, under Paragraph 50 of Section XVI (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the Director, Emergency and Remedial Response Division issues a final decision regarding such dispute. Nothing in this Settlement Agreement shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

59. Following EPA's determination that Settling Parties have failed to comply with a requirement of this Settlement Agreement, EPA may give Settling Parties written notification of the failure and describe the noncompliance. EPA may send Settling Parties a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Settling Parties of a violation.

60. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Settling Parties' receipt from EPA of a demand for payment of the penalties, unless Settling Parties invoke the dispute resolution procedures under Section XVI (Dispute Resolution). All payments to EPA under this Section shall be paid in accordance with the procedures set forth in Paragraph 45, and shall indicate that the payment is for stipulated penalties. At the time of payment, Settling Parties shall send notice that payment has been made to the EPA Project Coordinator, Site Attorney and Cincinnati Finance Center in accordance with Paragraph 45(b).

61. The payment of penalties shall not alter in any way Settling Parties' obligation to complete performance of the Work required under this Settlement Agreement.

62. Penalties shall continue to accrue during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA's decision.

63. If Settling Parties fail to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Settling Parties shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 60. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Settling Parties' violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Sections 106(b) and 122(f) of CERCLA, 42 U.S.C. §§ 9606(b) and 9622(f), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 106(b) or 122(f) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided in this Section, except in the case of a willful violation of this Settlement Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XX, Paragraph 67. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

#### **XIX. COVENANT NOT TO SUE BY EPA**

64. In consideration of the actions that will be performed and the payments that will be made by Settling Parties under the terms of this Settlement Agreement, and except as otherwise specifically



provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Settling Parties pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Settling Parties of all obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XV. This covenant not to sue extends only to Settling Parties and does not extend to any other person.

## **XX. RESERVATIONS OF RIGHTS BY EPA**

65. Except as specifically provided in this Settlement Agreement, nothing in this Settlement Agreement shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this Settlement Agreement shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Settling Parties in the future to perform additional activities pursuant to CERCLA or any other applicable law.

66. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Settling Parties with respect to all other matters, including, but not limited to:

- a. claims based on a failure by Settling Parties to meet a requirement of this Settlement Agreement;
- b. liability for costs not included within the definition of Future Response Costs;
- c. liability for performance of response action other than the Work;
- d. criminal liability;
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the LPRSA; and
- g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the LPRSA.

67. Work Takeover.

a. In the event EPA determines that Settling Parties have (i) ceased implementation of any portion of the Work, or (ii) are seriously or repeatedly deficient or late in the performance of the Work, or (iii) are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may issue a written notice ("Work Takeover Notice") to Settling Parties. Any Work Takeover Notice issued by EPA will specify the grounds upon which such notice was issued and will provide Settling Parties a period of 10 days within which to remedy the circumstances giving rise to EPA's issuance of such notice.

b. If, after expiration of the 10-day notice period specified in Paragraph 67(a), Settling Parties have not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portions of the Work as EPA deems necessary ("Work Takeover"). EPA shall notify Settling Parties in writing (which writing may be electronic) if EPA determines that implementation of a Work Takeover is warranted under this Paragraph.

c. Settling Parties may invoke the procedures set forth in Section XVI (Dispute Resolution), to dispute EPA's implementation of a Work Takeover under Paragraph 67(b). However, notwithstanding Settling Parties' invocation of such dispute resolution procedures and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a Work Takeover under Paragraph 67(b) until the earlier of (i) the date that Settling Parties remedy, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice or (ii) the date that a final decision is rendered in accordance with Section XVI (Dispute Resolution), requiring EPA to terminate such Work Takeover.

d. After commencement and for the duration of any Work Takeover, EPA shall have immediate access to and benefit of any performance guarantee(s) in an amount sufficient to fund the estimated cost of the remaining Work pursuant to Section XXVI of this Settlement Agreement, in accordance with the provisions of Paragraph 85 of that Section. If and to the extent that EPA is unable to secure the resources guaranteed under any such performance guarantee(s) and Settling Parties fail to remit a cash amount up to but not exceeding the amount needed to fund the estimated cost of the remaining Work, all in accordance with the provisions of Paragraph 85, any unreimbursed costs incurred by EPA in performing Work under the Work Takeover shall be considered Future Response Costs that Settling Parties shall pay pursuant to Section XVI (Payment of Response Costs).

68. Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

**XXI. COVENANT NOT TO SUE BY SETTLING PARTIES**

69. Except as specifically set forth in Paragraph 69(d) below, Settling Parties covenant not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of the Work, including any claim under the United States Constitution, the State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or Future Response Costs.

d. These covenants not to sue shall not extend to, and Settling Parties specifically reserve, (1) any claims or causes of action in contribution pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, against the United States as a "covered person" (within the meaning of Section 107(a) of CERCLA, 42 U.S.C. § 9607(a)) with respect to this Settlement Agreement, based solely on actions by the United States other than the exercise of the government's authority under CERCLA or WRDA; and (2) any claims or causes of action pursuant to the Tucker Act, 28 U.S.C. § 1491, against the United States with respect to this Settlement Agreement based solely on contracts that do not address or relate to the exercise of the government's authority under CERCLA or WRDA.

e. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 66(b), (c), (e), (f) and (g) but only to the extent that Settling Parties' claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

70. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

## **XXII. OTHER CLAIMS**

71. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Settling Parties. The United States or EPA shall not be deemed a party to any contract entered into by Settling Parties or their directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Settlement Agreement.

72. Except as expressly provided in Section XIX (Covenant Not to Sue by EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Settling Parties or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

73. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

### **XXIII. CONTRIBUTION**

74.a. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that Settling Parties are entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), or as may be otherwise provided by law for “matters addressed” in this Settlement Agreement. The “matters addressed” in this Settlement Agreement are the Work and Future Response Costs.

b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Settling Parties have, as of the Effective Date, resolved their liability to the United States for the Work and Future Response Costs.

c. Nothing in this Settlement Agreement precludes the United States or Settling Parties from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any persons not parties to this Settlement Agreement. Nothing in this Settlement Agreement diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

### **XXIV. INDEMNIFICATION**

75. Settling Parties shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Parties, their officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Settling Parties agree to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Settling Parties, their officers, directors, employees, agents, contractors, subcontractors and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Settling Parties in carrying out activities pursuant to this Settlement Agreement. Neither Settling Parties nor any such contractor shall be considered an agent of the United States.

76. The United States shall give Settling Parties notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Settling Parties prior to settling such claim.

77. Settling Parties waive all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Parties and any person

for performance of Work on or relating to the LPRSA, including, but not limited to, claims on account of construction delays. In addition, Settling Parties shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Parties and any person for performance of Work on or relating to the LPRSA, including, but not limited to, claims on account of construction delays.

## **XXV. INSURANCE**

78. At least 7 days prior to commencing any on-Site work under this Settlement Agreement, Settling Parties shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of \$5 million dollars, combined single limit, naming EPA as an additional insured. The insurance required by this paragraph may be provided under the policies of insurance obtained by Settling Parties under the RI/FS Settlement Agreement. Within the same time period, Settling Parties shall provide EPA with certificates of such insurance and a copy of each insurance policy. Settling Parties shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Settling Parties shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Parties in furtherance of this Settlement Agreement. If Settling Parties demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Settling Parties need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

## **XXVI. FINANCIAL ASSURANCE**

79. Within 30 days of the Effective Date, Settling Parties shall establish and maintain financial security for the benefit of EPA in the amount of \$20 million in one or more of the following forms, in order to secure the full and final completion of Work by Settling Parties:

- a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
- b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA;
- c. a trust fund administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;
- d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;
- e. a written guarantee to pay for or perform the Work provided by one or more parent companies of Settling Parties, or by one or more unrelated companies that have a substantial business

relationship with at least one of Settling Parties; including a demonstration that any such guarantor company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or

f. a demonstration of sufficient financial resources to pay for the Work made by one or more of Settling Parties, which shall consist of a demonstration that any such Setting Party satisfies the requirements of 40 C.F.R. Part 264.143(f).

80. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Settling Parties shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 79, above. In addition, if at any time EPA notifies Settling Parties that the anticipated cost of completing the Work has increased, then, within 30 days of such notification, Settling Parties shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Settling Parties' inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

81. If Settling Parties seek to ensure completion of the Work through a guarantee pursuant to Subparagraph 79(e) or 79(f) of this Settlement Agreement, Settling Parties shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date or such other date as agreed by EPA, to EPA. For the purposes of this Settlement Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the dollar amount to be used in the relevant financial test calculations shall be the current cost estimate of \$20 million for the Work at the Site plus any other RCRA, CERCLA, TSCA, or other federal environmental obligations financially assured by the relevant Settling Party or guarantor to EPA by means of passing a financial test.

82. If, after the Effective Date, Settling Parties can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 79 of this Section, Settling Parties may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Settling Parties shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Settling Parties may seek dispute resolution pursuant to Section XVI (Dispute Resolution). Settling Parties may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

83. Settling Parties may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Settling Parties may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

84. Settling Parties have selected, and EPA has approved, as an initial financial assurance, a trust fund pursuant to a Trust Agreement attached hereto as Appendix E. Within 20 days of the Effective Date of this Settlement Agreement, Settling Parties shall execute or otherwise finalize all instruments or other documents required in order to make the selected financial assurance legally binding in a form substantially identical to the documents attached hereto as Appendix E, and the Trust Agreement shall thereupon be fully effective. Within 60 days of the Effective Date of this Settlement Agreement, Settling Parties shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected Trust Agreement legally binding to the RPM with a copy to the Diamond Alkali Superfund Site/Lower Passaic River Study Area Attorney.

85. The commencement of any Work Takeover pursuant to Paragraph 67 of this Settlement Agreement shall trigger EPA's right to receive the benefit of any financial assurance provided pursuant to Paragraph 79(a), (b), (c), (d), or (e), in accordance with Paragraph 67(d) and at such time EPA shall have immediate access to resources guaranteed under any such financial assurance, whether in cash or in kind, as needed to continue and complete the Work assumed by EPA under the Work Takeover. If for any reason EPA is unable to promptly secure the resources guaranteed under any such financial assurance, whether in cash or in kind, necessary to continue and complete the Work assumed by EPA under the Work Takeover, or in the event that the financial assurance involves a demonstration of satisfaction of the financial test criteria pursuant to Paragraph 79(f), Settling Parties shall immediately upon written demand from EPA deposit into an account specified by EPA, in immediately available funds and without setoff, counterclaim, or condition of any kind, a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed as of such date, as determined by EPA.

## **XXVII. MODIFICATIONS**

86. The OSC, in consultation with the RPM, may make modifications to any plan or schedule or Statement of Work that will not materially expand or alter the scope of the Work in writing or by oral direction. Any oral modification will be memorialized in writing by EPA promptly, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Settlement Agreement may be modified in writing by mutual agreement of the parties.

87. If Settling Parties seek permission to deviate from any approved work plan or schedule or Statement of Work, Settling Parties' Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Settling Parties may not proceed with the requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 86. Settling Parties may request minor field modifications within the scope of the SOW without submission of a formal amendment to the Work Plan, and the OSC may authorize minor field modifications to the approved Work Plan provided that any such modifications are consistent with the SOW, and the modifications are memorialized in writing.

88. No informal advice, guidance, suggestion, or comment by the OSC or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Settling Parties shall relieve Settling Parties of their obligation to obtain any formal approval required

by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

#### **XXVIII. ADDITIONAL WORK**

89. If EPA determines that additional removal activities not included in an approved plan, but that will not materially expand or alter the scope of the Work described in Paragraph 19 or the SOW, are necessary with respect to the RM 10.9 Removal Area to protect public health, welfare, or the environment, EPA will notify Settling Parties of that determination. Unless otherwise stated by EPA, within 30 days of receipt of notice from EPA that additional removal activities are necessary to protect public health, welfare, or the environment, Settling Parties shall submit for approval by EPA a Work Plan for the additional Work. The plan shall conform to the applicable requirements of Section VIII (Work to Be Performed) of this Settlement Agreement. Upon EPA's approval of the plan pursuant to Section VIII, Settling Parties shall implement the plan for additional removal actions in accordance with the provisions and schedule contained therein. If Settling Parties object to the additional Work, Settling Parties may seek dispute resolution pursuant to Section XVI. This Section does not alter or diminish the OSC's authority to make oral modifications to any plan or schedule pursuant to Section XXVII (Modifications). Notwithstanding the above, EPA and Settling Parties may agree to use or adapt this form of Settlement Agreement, including some or all of the Appendices, in connection with future work that EPA and Settling Parties may agree to undertake in the LPRSA.

#### **XXIX. NOTICE OF COMPLETION OF WORK**

90. When EPA determines, after EPA's review of the Final Report, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including post-removal site controls, payment of Future Response Costs, and record retention, EPA will provide written notice to Settling Parties. If EPA determines that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Settling Parties, provide a list of the deficiencies, and require that Settling Parties modify the Work Plan if appropriate in order to correct such deficiencies. Settling Parties shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the EPA notice. Failure by Settling Parties to implement the approved modified Work Plan shall be a violation of this Settlement Agreement.

#### **XXXI. INTEGRATION/APPENDICES**

91. This Settlement Agreement and its appendices constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:



Appendix A is the list of Settling Parties.  
Appendix B is the Action Memorandum/Enforcement  
Appendix C is the map showing the RM 10.9 Removal Area.  
Appendix D is the Statement of Work.  
Appendix E is the Trust Agreement.  
Appendix F is the List of Documents.

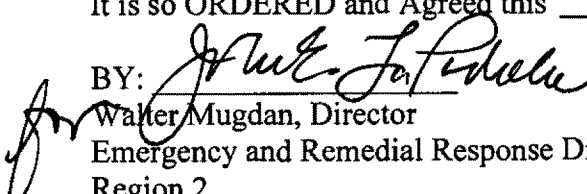
### **XXXII. EFFECTIVE DATE**

92. This Settlement Agreement shall be effective on the day that it is signed by the Regional Administrator or her delegatee. The undersigned representatives of Settling Parties certify that they are fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the parties they represent to this document.

It is so ORDERED and Agreed this 18<sup>th</sup> day of June, 2012.

BY:

DATE:

  
Walter Mugdan, Director  
Emergency and Remedial Response Division  
Region 2  
U.S. Environmental Protection Agency

June 18, 2012

EFFECTIVE DATE: 6/18/2012

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 5<sup>th</sup> day of June, 2012.

For Settling Party Arkema Inc.

By Doug Winters - Legacy Site Services LLC, agent  
for Arkema Inc.

Title EVP

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 31<sup>st</sup> day of May, 2012.

For Settling Party Ashland Inc.

By Michael S. Roe

Title Assistant General Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 11 day of JUNE, 2012.

For Settling Party ATLANTIC RICHFIELD COMPANY

By Cynthia D. KGOB

Title STRATEGY MANAGER

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

## **Administrative Agreement and Order on Consent for Removal Action**

Agreed this 25<sup>th</sup> day of May, 2012

For Settling Party:

**BASF Corporation, on its own behalf and on behalf of BASF Catalysts LLC**

By: 

Steven J. Goldberg

Vice President & Associate General Counsel

BASF Corporation

100 Park Avenue

Florham Park, NJ 07932

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 11 day of June, 2012.

For Settling Party Belleville Industrial Center

By Carol Shapiro, Carol Shapiro

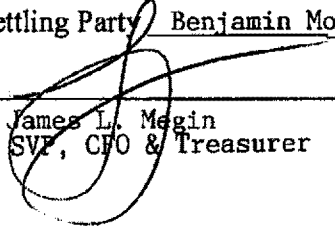
Title President  
Belleville Industrial Center

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 6th day of JUNE, 2012.

For Settling Party Benjamin Moore & Co.

By

  
James L. Megin  
SVP, CFO & Treasurer

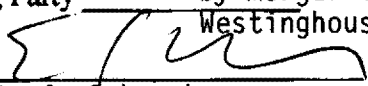
Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 12<sup>th</sup> day of June, 2012.

For Settling Party CBS Corporation, a Delaware corporation, f/k/a Viacom Inc., successor  
by merger to CBC Corporation, a Pennsylvania corporation, f/k/a  
Westinghouse Electric Corporation

By

  
Eric J. Sobczak

Title Vice President, Associate General Counsel



**Signature Page:** In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

**Administrative Agreement and Order on Consent for Removal Action**

Agreed this 24 day of May, 2012.

For Settling Party Chevron Environmental Management Company, for itself and as Attorney-in-Fact for

By Robert R. John Texaco Inc. and TRM-H LLC

Title Assistant Secretary

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12 day of June, 2012.

For Settling Party CNA Holdings LLC

By Gary M. Roux

Title Assistant Secretary



Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 24 day of MAY, 2012.

For Settling Party Coats & Clark Inc.

By 

Title VP & Treasure

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 14 day of June, 2012.

For Settling Party CORE INDUSTRIES INC

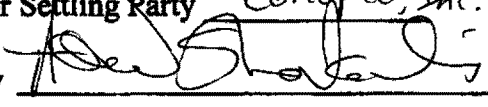
By [Signature]

Title Vice President

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 11<sup>th</sup> day of June, 2012.

For Settling Party Conopco, Inc. d/b/a Unilever (as successor to  
By  CPC/Bestfoods, former parent of the  
Penick Corporation (facility located  
at 540 New York Avenue, Lyndhurst, NJ))

Title Andrew Shakalis  
Associate General Counsel-  
Environmental & Safety  
as in-house counsel, acting  
on behalf of Conopco, Inc.

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 14 day of June, 2012.

For Settling Party Cooper Industries, LLC

By Bruno

Title Sr. V.P. + General Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 11<sup>th</sup> day of June, 2012.

For Settling Party Covanta Essex Company, by its General Partner,  
Covanta Essex LLC

By   
Paul Stauder MR

Title SVP

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 29<sup>th</sup> day of MAY, 2012.

For Settling Party Croda Inc.

By 

Title Attorney and Authorized Agent



Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12<sup>th</sup> day of June, 2012.

For Settling Party DSI Industries, LLC

By 

Title VP

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 24 day of MAY, 2012.

For Settling Party Dilorenzo Properties Company on behalf of itself and Re Goldman /

By [Signature] Goldman / Dilorenzo Partnership

Title Authorized Agent For Settling Party

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 29 day of May, 2012.

For Settling Party De Ponts Company

By Bernard J. Reilly

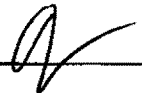
Title Corporate Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 12<sup>TH</sup> day of JUNE, 2012.

For Settling Party EDEN WOOD CORPORATION

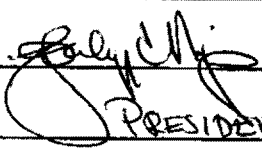
By 

Title PRESIDENT

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12 day of June, 2012.

For Settling Party ELAN Chemical Company, Inc.

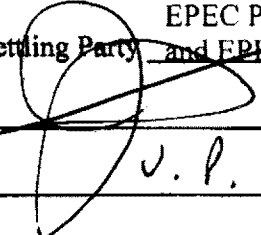
By 

Title PRESIDENT

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 11 day of June, 2012.

For Settling Party EPEC Polymers, Inc. on behalf of itself  
~~and EPEC Oil Company Liquidating Trust~~

By  \_\_\_\_\_

SJM Title V. P. \_\_\_\_\_

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 13<sup>th</sup> day of June, 2012.

For Settling Party ESSEX CHEMICAL CORPORATION

By Edward F. Tala

Title AUTHORIZED REPRESENTATIVE

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 13<sup>th</sup> day of June, 2012.

For Settling Party Exelis Inc. for itself and ITT Corporation

By Amanda Davidson

Title Senior Vice President

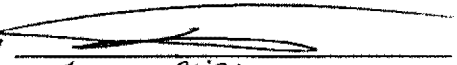


Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12<sup>th</sup> day of June, 2012.

For Settling Party Flexon Industries Corp.

By

  
Thomas Spiesman

Title Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 2<sup>nd</sup> day of June, 2012.

For Settling Party Franklin-Burlington Plastics, Inc.

By N.W. Spindel

Title Attorney and Authorized Agent

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 29th day of May, 2012.

For Settling Party Garfield Molding Co. Inc.

By Charles J. Finney

Title President

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 13<sup>th</sup> day of June, 2012.

For Settling Party General Electric


By A. R. K. L.

Title Vice President General Electric

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 25 day of May, 2012.

For Settling Party Givaudan

By John Vernieri 

Title EVP Consumer Products

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12<sup>th</sup> day of June, 2012.

For Settling Party Goodrich Corporation

By Sally L. Gail

Title Vice President, Associate General Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 29<sup>th</sup> day of May, 2012.

For Settling Party HESS Corporation, on its own behalf and  
By Elizabeth Cheney on behalf of Atlantic  
VP EHS & SR Richfield Company

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12<sup>th</sup> day of June, 2012.

For Settling Party Hexcel Corporation

By [Signature] Rodney P. Jenks Jr.

Title Asst Secretary



In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 25 day of May, 2012.

For Settling Party Hoffmann-La Roche Inc.

By:



\_\_\_\_\_  
Frederick C. Kentz, III

Title: Vice President

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 11th day of June, 2012.

For Settling Party Honeywell

By John J. Morris

Title Remediation Director

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 31<sup>st</sup> day of May, 2012.

For Settling Party ISP CHEMICALS LLC

By Michael S. Roe

Title Assistant General Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 30 day of May, 2012.

For Settling Party Kao, USA, Inc.

By [Signature]

Title VP- BC, SCM, CEO, AMERICA

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 14 day of June, 2012.

Leemilt's Petroleum, Inc. (successor to Power Test of New Jersey, Inc.)

For Settling Party on its behalf and on behalf of Power Test Realty Company Limited Partnership and Getty Properties Corp., the General Partner of

By Nicole R. Moshko, Esq. Power Test Realty Company Limited Partnership

Title Attorney on behalf of Settling Party Leemilt's Petroleum, Inc. (successor to Power Test of New Jersey, Inc.) on its behalf and on behalf of Power Test Realty Company Limited Partnership and Getty Properties Corp., the General Partner of Power Test Realty Company Limited Partnership

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 6 day of June, 2012.

For Settling Party Legacy Vulcan Corp.

By Robert A. Wason IV

Robert A. Wason IV  
Senior Vice President &  
General Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12th day of June, 2012.

For Settling Party Linde LLC on behalf of the BOC Group

By James Stewart

Title Authorized Agent and Attorney for  
Linde LLC on behalf of the BOC Group

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 7th day of June, 2012.

For Settling Party LUCENT TECHNOLOGIES INC. NOW KNOWN AS ALCATEL-LUCENT USA INC

By Ralph J. McManis

Title COUNSEL



Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 24 day of May, 2012 .

For Settling Party Mallinckrodt Inc., now known as Mallinckrodt LLC

By Kathleene A. Schaefer *pd*

Title Vice President - Controller

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12<sup>th</sup> day of JUNE, 2012.

For Settling Party NATIONAL-STANDARD, LLC

By Ray M. Schramm

Title Assistant Secretary

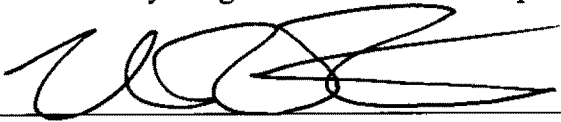
**Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.**

**Administrative Agreement and Order on Consent for Removal Action**

Agreed this 31<sup>st</sup> day of May, 2012.

For Settling Party Newell Rubbermaid Inc.,  
on behalf of itself and its wholly-owned subsidiaries  
Goody Products, Inc. and Berol Corporation  
(as successor by merger to Faber-Castell Corporation)

By



Title

**Michael R. Peterson**  
**Assistant Secretary**

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 13th day of June, 2012.

For Settling Party News Publishing Australia Limited

By Peter Simshauser  
Peter Simshauser

Title Attorney

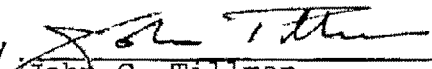
Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 1st day of June, 2012.

For Settling Party Novelis Corporation

By

  
\_\_\_\_\_  
John C. Tillman

Title Regional Counsel, North America

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12th day of June, 2012 .

For Settling Party Otis Elevator Company

By W.F. Leikin

Title William F. Leikin  
Attorney-in-Fact

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 5<sup>th</sup> day of June, 2012.

For Settling Party Pfizer Inc.

By Michael G Mahony

Title V.P. and Assistant General Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12th day of June, 2012 .

For Settling Party Pharmacia Corporation

By   
John F. Gullace

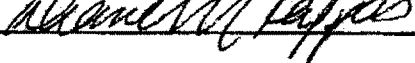
Title Attorney



Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 27 day of May, 2012.

For Settling Party PPG Industries, Inc.

By 

Title Vice President EHS

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 8<sup>TH</sup> day of June, 2012.

For Settling Party

PSEG

By

John DeLuca

Title

Counsel for PSEG

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 28th day of May, 2012.

For Settling Party Purdue Pharma Technologies, Inc.

By James Stewart

Title Authorized Agent and Attorney for Purdue Pharma Technologies, Inc.

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 12<sup>th</sup> day of June, 2012.

For Settling Party Quality Carriers, Inc.

By 

Title CFO

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 29 day of May, 2012.

For Settling Party REICHHOLD, INC.

By Ryan L. Willis

Title CFO

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 7th day of June, 2012 .

For Settling Party Revere Smelting and Refining

By   
Title Senior Vice President

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

**Administrative Agreement and Order on Consent for Removal Action**

Agreed this 12 day of June, 2012.

For Settling Party Safety-Kleen EnviroSystems Company by McKesson,  
and McKesson Corporation for itself

By 

Title Vice-President and Treasurer

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 11 day of June, 2012.

For Settling Party SEQUA CORPORATION

By Brian L. Buniva (BRIAN L. BUNIVA)

Title SENIOR DIRECTOR ENVIRONMENT, HEALTH & SAFETY



Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 25<sup>th</sup> day of May, 2012.

For Settling Party Seton Company

By 

Title David Steinberger, Attorney and  
Authorized Agent For Seton Company

**XXXI. INTEGRATION/APPENDICES**

91. This Settlement Agreement and its appendices constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:

- Appendix A is the list of Settling Parties.
- Appendix B is the Action Memorandum/Enforcement
- Appendix C is the map showing the RM 10.9 Removal Area.
- Appendix D is the Statement of Work.
- Appendix E is the Trust Agreement.
- Appendix F is the List of Documents.

**XXXII. EFFECTIVE DATE**

92. This Settlement Agreement shall be effective on the day that it is signed by the Regional Administrator or his/her delegatee. The undersigned representative(s) of Settling Parties certify(ies) that it (they) is (are) fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the party(ies) it (they) represent(s) to this document.

It is so ORDERED and Agreed this \_\_\_\_\_ day of \_\_\_\_\_, 2\_\_\_\_.

BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Name

Regional Administrator (or designee)

Region (Number)

U.S. Environmental Protection Agency

EFFECTIVE DATE: \_\_\_\_\_

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 14 day of June, 2012.

For Settling Party STWB Inc.

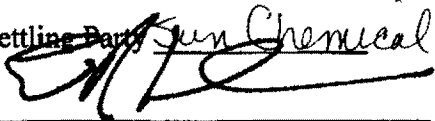
By \_\_\_\_\_

Title President

*Franky Panvels*

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 7th day of June, 2012.

For Settling Party Kun Chemical Corporation  
By 

ERIC R. FINKELMAN  
Title Vice President General Counsel  
and Secretary

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 25<sup>th</sup> day of May, 2012.

Tate & Lyle Ingredients Americas LLC, formerly known as Tate & Lyle  
For Settling Party Ingredients Americas, Inc., formerly known as A.E. Staley Manufacturing  
Company (for itself and its former division Staley Chemical)

By   
John R. Holsinger

Title Attorney at Law

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.


Administrative Agreement and Order on Consent for Removal Action  
Agreed this 31st day of May, 2012.

For Settling Party Teva Pharmaceuticals USA, Inc.

By 

Title Vice President, General Counsel



  
Kirsten E. Bauer  
General Counsel, TUSA

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 30 day of May, 2012.

For Settling Party Teval Corporation

By Lee Henig-Elona

Title Attorney

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 7<sup>th</sup> day of June, 2012.

For Settling Party Textron Inc.

By [Signature]

Title VP & Deputy General Counsel - Litigation

OK  
JMS  
6/5/12

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site:

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 13<sup>th</sup> day of June, 2012.

For Settling Party The Hartz Consumer Group, Inc., as successor to certain liabilities of The Hartz Mountain Corporation

By   
Curtis L. Michael

Title VP/Assistant General Counsel



Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 30th day of May, 2012 .

For Settling Party The Newark Group

By James Stewart

Title Authorized Agent and Attorney for The Newark Group

10.9

32

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 30 day of MAY, 2012.

For Settling Party The Sherwin Williams Company

By 

Title V.P. General Counsel

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 25 day of May, 2012.

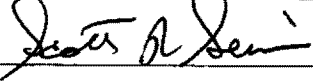
For Settling Party \_\_\_\_\_

By Debi J. Meyer

Title VICE PRESIDENT EHS  
STANLEY BLACK & DECKER

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 6 day of June, 2012.

For Settling Party Three County Volkswagen Corp  
By 

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the  
Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action  
Agreed this 18<sup>th</sup> day of May, 2012.

For Settling Party: Tiffany and Company

By



Patrick B. Dorsey

Title **Senior Vice President, Secretary  
and General Counsel**

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 14<sup>th</sup> day of June, 2012.

For Settling Party Vertellus Specialties Inc.

By Thomas A. McEvoy

Title Corporate Counsel, Environmental

Signature Page: In the matter of the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site.

Administrative Agreement and Order on Consent for Removal Action

Agreed this 5<sup>th</sup> day of June, 2012.

For Settling Party Wyeth (now known as Wyeth, LLC) on behalf of Shulton, Inc.

By Michael S. Mahoney

Title V.P. and Assistant General Counsel

## **Appendix A – List of Settling Parties**

1. Arkema Inc.
2. Ashland Inc.
3. Atlantic Richfield Company
4. BASF Corporation, on its own behalf and on behalf of BASF Catalysts LLC
5. Belleville Industrial Center
6. Benjamin Moore & Co.
7. CBS Corporation, a Delaware corporation, f/k/a Viacom Inc., successor by merger to CBS Corporation, a Pennsylvania corporation, f/k/a Westinghouse Electric Corporation
8. Chevron Environmental Management Company, for itself and on behalf of Texaco, Inc. and TRMI-H LLC
9. CNA Holdings LLC
10. Coats & Clark, Inc.
11. Coltec Industries
12. Conopco, Inc. d/b/a Unilever (as successor to CPC/Bestfoods, former parent of the Penick Corporation (facility located at 540 New York Avenue, Lyndhurst, NJ))
13. Cooper Industries, LLC
14. Covanta Essex Company
15. Croda Inc.
16. DII Industries, LLC
17. DiLorenzo Properties Company on behalf of itself and the Goldman /Goldman/DiLorenzo Properties Partnerships
18. E. I. du Pont de Nemours and Company
19. Eden Wood Corporation
20. Elan Chemical Company
21. EPEC Polymers, Inc. on behalf of itself and EPEC Oil Company Liquidating Trust
22. Essex Chemical Corporation
23. Exelis Inc. for itself and for ITT Corporation
24. Flexon Industries Corp.
25. Franklin-Burlington Plastics, Inc.
26. Garfield Molding Co., Inc.
27. General Electric Company
28. Givaudan Fragrances Corporation (Fragrances North America)
29. Goodrich Corporation on behalf of itself and Kalama Specialty Chemicals, Inc.
30. Hess Corporation, on its own behalf and on behalf of Atlantic Richfield Company
31. Hexcel Corporation
32. Hoffmann-La Roche Inc. on its own behalf, and on behalf of its affiliate Roche Diagnostics
33. Honeywell International Inc.
34. ISP Chemicals LLC
35. Kao USA Inc.
36. Leemilt's Petroleum, Inc. (successor to Power Test of New Jersey, Inc.), on its behalf and on behalf of Power Test Realty Company Limited Partnership and Getty Properties Corp., the General Partner of Power Test Realty Company Limited Partnership
37. Legacy Vulcan Corp.

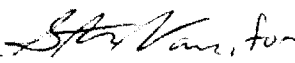


38. Linde LLC on behalf of The BOC Group, Inc.
39. Lucent Technologies Inc. now known as Alcatel-Lucent USA, Inc.
40. Mallinckrodt Inc.
41. National-Standard LLC
42. Newell Rubbermaid Inc., on behalf of itself and its wholly-owned subsidiaries Goody Products, Inc. and Berol Corporation (as successor by merger to Faber-Castell Corporation)
43. News Publishing Australia Ltd. (successor to Chris-Craft Industries)
44. Novelis Corporation (f/k/a Alcan Aluminum Corporation)
45. Otis Elevator Company
46. Pfizer, Inc.
47. Pharmacia Corporation (f/k/a Monsanto Company)
48. PPG Industries, Inc.
49. Public Service Electric and Gas Company
50. Purdue Pharma Technologies, Inc.
51. Quality Carriers, Inc. as successor to Chemical Leaman Tank Lines, Inc. and Quality Carriers, Inc.'s corporate affiliates and parents
52. Reichhold, Inc.
53. Revere Smelting and Refining Corporation
54. Safety-Kleen Envirosystems Company by McKesson, and McKesson Corporation for itself
55. Sequa Corporation
56. Seton Tanning
57. STWB Inc.
58. Sun Chemical Corporation
59. Tate & Lyle Ingredients Americas LLC (f/k/a A.E. Staley Manufacturing Company, including its former division Staley Chemical Company)
60. Teva Pharmaceuticals USA, Inc. (f/k/a Biocraft Laboratories, Inc.)
61. Teval Corporation
62. Textron Inc.
63. The Hartz Consumer Group, Inc., on behalf of The Hartz Mountain Corporation
64. The Newark Group
65. The Sherwin-Williams Company
66. Stanley Black & Decker, Inc.
67. Three County Volkswagen
68. Tiffany and Company
69. Vertellus Specialties Inc. f/k/a Reilly Industries, Inc.
70. Wyeth, on behalf of Shulton, Inc.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION II**

**DATE:** MAY 21 2012

**SUBJECT:** Action Memorandum/Enforcement: Determination of Need to Conduct a CERCLA Time-Critical Removal Action at the Diamond Alkali Superfund Site, Lower Passaic River Study Area, River Mile 10.9 Removal Area, Lyndhurst, New Jersey

**FROM:** Raymond Basso, Director  
Lower Passaic River Project 

**TO:** Walter E. Mugdan, Director  
Emergency and Remedial Response Division

**I. PURPOSE**

The purpose of this Action Memorandum is to document the determination of the need to conduct a time-critical removal action within an approximately five-acre area in the Lower Passaic River Study Area (LPRSA) at River Mile (RM) 10.9 in Lyndhurst, New Jersey. Figure 1 shows the areal extent of what will be referred to herein as the RM 10.9 Removal Area. EPA anticipates that this removal action will be performed by potentially responsible parties pursuant to an administrative settlement agreement and order on consent.

The removal action will result in the removal of the surface portion of the sediments containing significantly elevated concentrations of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (collectively, PCDDs/PCDFs), polychlorinated biphenyls (PCBs), mercury, polycyclic aromatic hydrocarbons (PAHs) and other hazardous substances, which if released, could adversely impact nearby human populations, animals, and the food chain, and capping of the underlying sediments. The peak concentrations detected in the top six inches of sediment include 2,3,7,8-TCDD at 21.6 parts per billion (ppb), PCBs at 34 parts per million (ppm), mercury at 22 ppm and total high molecular weight PAHs at 510 ppm. These maxima are among the highest concentrations found in the surface sediments of the LPRSA.

Conditions at the RM 10.9 Removal Area meet the criteria for a removal action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300.

The removal action will mitigate threats to the public health, welfare and the environment posed by the presence of the high levels of contaminants in the surface sediments in the RM 10.9 Removal Area. Since the high levels of the aforementioned contaminants present in the top six inches of sediment are currently bio-available and subject to migration or release due to weather and/or hydrologic conditions, this response will be conducted as a time-critical removal action.

The Environmental Protection Agency (EPA) Region 2 conducted briefings on the proposed removal action for citizens and local officials at public availability sessions in the Town of Lyndhurst and Citizen Advisory Group meetings in Newark, New Jersey. Coordination and consultation with local officials and the public will continue throughout the design and construction phase of the project.

The New Jersey Department of Environmental Protection (NJDEP) was involved in developing the technical scope of the project and agrees with the proposed removal action for this Site.

## **II. SITE CONDITIONS AND BACKGROUND**

This Action Memorandum documents the proposed time-critical removal action for the Site. The Comprehensive Environmental Response, Compensation and Liability Information System ID number for the Diamond Alkali Site, of which RM 10.9 Removal Area is a part, is NJD980528996.

### **A. Site Description**

#### **1. Removal Site Evaluation**

The Diamond Alkali Superfund Site includes the former Diamond Alkali facility located at 80 and 120 Lister Avenue in Newark, New Jersey, the LPRSA, and the Newark Bay Study Area. The LPRSA is the 17-mile, tidal portion of the Passaic River, from the Dundee Dam near Garfield, New Jersey to Newark Bay and includes the RM 10.9 Removal Area. The LPRSA is a facility as defined by Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9). The contamination found at the RM 10.9 Removal Area includes "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a).

The conditions in the sediments at the RM 10.9 Removal Area meet a number of the specific factors identified in 40 CFR Part 300.415(b)(2) for EPA to consider in determining the appropriateness of a removal action, including, but not limited to:

1. an actual or potential release of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs, exposing nearby human populations, animals or the food chain (40 CFR §300.415(b)(2)(i));
2. actual or potential contamination of sensitive ecosystems due to the presence of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs (40 CFR §300.415(b)(2)(ii)); and
3. high levels of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs, present at or near the surface of the sediment that could migrate or be released due to weather and/or hydrologic conditions (40 CFR §300.415(b)(2)(iv)-(v)).

## **2. Physical location**

The RM 10.9 Removal Area is an approximately five-acre area located on the eastern side of the LPRSA within a larger area (the RM 10.9 Study Area) that extends approximately 2,380 feet from RM 10.65 to RM 11.1, along an inside bend of the river upstream of the Delesse-Avondale Street Bridge, and that includes the mudflat and point bar in the eastern half of the river channel. It is bounded to the west by the navigation channel of the Passaic River and to the east by the Riverside Park complex, which is owned and operated by Bergen County and the Town of Lyndhurst. The RM 10.9 Removal Area dimensions were determined based on a review of sediment data collected at 54 locations within the RM 10.9 Study Area (Figure 2), and will be further refined during a pre-design investigation.

The area surrounding the RM 10.9 Removal Area consists predominately of recreational facilities such as parkland and numerous ball fields. A number of public boat launches are also located in the vicinity and use of the river for recreational boating is ongoing and significant.

## **3. Site characteristics**

In 2004, EPA commenced a remedial investigation and feasibility study (RI/FS) of the 17-mile LPRSA, funded by a group of potentially responsible parties known as the Lower Passaic River Cooperating Parties Group (CPG) under a Settlement Agreement pursuant to CERCLA Section 122(h), 42 U.S.C. § 9622(h). The RI/FS represented EPA's portion of work being undertaken by a partnership of federal and State of New Jersey agencies under CERCLA and the federal Water Resources Development Act (WRDA). In May 2007, EPA entered into another settlement agreement with the CPG, under which the CPG agreed to complete the RI/FS for the LPRSA (the RI/FS Agreement). The RI/FS is proceeding under the direction and oversight of EPA.

Sediment samples collected in the RM 10.9 Study Area as part of the RI/FS suggested that significantly elevated concentrations of PCDDs/PCDFs, PCBs, mercury, PAHs and other contaminants might be present in this area. In April 2011, the CPG proposed and EPA agreed that the CPG would undertake additional sampling and analysis, and perform bathymetry and hydrodynamic survey work, to characterize and develop information about the extent of contamination in the RM 10.9 Study Area. The data from the samples collected by the CPG confirmed that portions of the sediment located in the RM 10.9 Study Area, which includes a mudflat on the eastern shore of the Passaic River that is exposed at low tide, contains significantly elevated concentrations of PCDDs/PCDFs, PCBs, mercury, PAHs and other hazardous substances. In the first six inches of sediment, peak concentrations detected include 2,3,7,8-TCDD at 21.6 ppb, PCBs at 34 ppm, mercury at 22 ppm and total high molecular weight PAHs at 510 ppm. These maxima are among the highest found in the LPRSA. Elevated concentrations of PCDDs/PCDFs, PCBs and mercury are generally co-located in surface and subsurface sediments.

Riverside County Park, which is owned by Bergen County, is located on the eastern shore of the River adjacent to the RM 10.9 Removal Area. Immediately adjacent to the north end of Riverside County Park are baseball fields owned by the Town of Lyndhurst that are adjacent to the RM 10.9 Removal Area as well. Individuals utilizing the River, including boaters, waders

and anglers, could be exposed to the sediments. The sediment at the surface of the RM 10.9 Removal Area also acts as a low-level, ongoing source of contamination to other parts of the river through erosion, and may act as a significant, event-driven source of contamination during high-flow events, when elevated shear stresses created by higher flows could lead to significant erosion.

EPA conducted additional soil sampling in the parks located adjacent to the RM 10.9 Study Area. Concentrations detected in the parks were below levels of concern and no additional action is contemplated at this time.

#### **4. Release or threatened release into the environment of a hazardous substance, or pollutant, or contaminant**

The sediments of the LPRSA contain concentrations of numerous hazardous substances, including, but not limited to PCDDs/PCDFs, PCBs, PAHs, dichlorodiphenyl-trichloroethate (DDT), dieldrin, chlordane, mercury, cadmium, copper, and lead. The discovery of widespread contamination in the LPRSA and Newark Bay led the State of New Jersey to issue a number of fish consumption advisories in 1983 and 1984, which prohibited the sale or consumption of all fish, shellfish, and crustaceans from the LPRSA. These State fish advisories and prohibitions are still in effect.

The chemical data from the investigation of the RM 10.9 Removal Area indicate some of the highest contaminant levels reported within the biologically active zone in the entire LPRSA. These sediments pose a serious threat, because surface sediment contaminant concentrations are among the highest found in the LPRSA and they exceed the levels that can produce toxic effects to human health and biota.

The contamination found at the RM 10.9 Removal Area includes "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a). The above data are only a summary of the more pertinent analytical information. The remainder of the analytical data is available in the Administrative Record for this removal action.

#### **5. NPL status**

EPA placed the Diamond Alkali Superfund Site on the National Priorities List (NPL) by publication in the Federal Register on September 21, 1984. 49 Fed. Reg. 37070. The Site includes the former pesticides manufacturing facility located at 80 Lister Avenue and surrounding property located at 120 Lister Avenue in Newark, New Jersey (known as Operable Unit 1 or "OU1"), the LPRSA, which is defined as the 17-mile stretch of the Lower Passaic River from Dundee Dam to Newark Bay, the Newark Bay Study Area, consisting of Newark Bay and portions of the Hackensack River, Arthur Kill and Kill van Kull, and the areal extent of contamination.

## **6. Maps, pictures, and other graphic representation**

Attached to this memorandum are figures depicting:

- the extent of the RM 10.9 Removal Area
- the sampling that was conducted in the RM 10.9 Study Area and on the adjacent parks,
- the concentrations of 2,3,7,8-TCDD, PCBs, and mercury detected in the surface sediment of the RM 10.9 Study Area.

### **B. Other Actions to Date**

#### **1. Previous actions**

In the mid-1980s, in response to the releases of hazardous substances at the former Diamond Alkali facility, the Diamond Shamrock Chemicals Company (Diamond) entered into two separate administrative consent orders with NJDEP to conduct a RI/FS for 80 and 120 Lister Avenue. Since the Lister Avenue properties are adjacent to the Passaic River, the remedial investigation included the sampling and assessment of sediment contamination in the Passaic River. Sampling and assessment of the Passaic River conducted by Diamond in 1984-1986 indicated that contaminants from OU1, including 2,3,7,8-TCDD, DDT, 2,4-dichlorophenoxyacetic acid, 2,4,5-trichlorophenoxyacetic acid and 2,4,5-trichlorophenol had migrated into the Lower Passaic River Study Area. Further, sampling has shown that the LPRSA is contaminated with many other hazardous substances, including, but not limited to, cadmium, copper, lead, mercury, nickel, zinc, PAHs, and PCBs.

During the 1980s, removal activities were performed by NJDEP, EPA and Diamond. These removal activities included the excavation of soils contaminated with hazardous substances, and placement of a geotextile fabric on 80 Lister Avenue. Hazardous substances were vacuumed from the streets in the vicinity of 80 Lister Avenue. The soils and debris vacuumed from the streets, along with excavated soils that were also contaminated with hazardous substances, were later secured on the 120 Lister Avenue property. The removal activities were completed in 1986.

Based on the results of the RI/FS, EPA issued a Record of Decision (ROD) on September 30, 1987. The ROD selected an interim remedial action plan for cleanup of OU1, consisting of (1) construction of a slurry wall and flood wall around the properties, (2) installation of a cap over the properties, and (3) the pumping and treatment of groundwater to reduce the migration of contaminated groundwater to the river. On October 20, 1988, EPA issued a notice letter to Occidental Chemical Corporation (OCC) regarding its liability for the Site. Pursuant to a judicial Consent Decree with EPA entered by the Court in 1990, OCC and Chemical Land Holdings, Inc. (now known as Tierra Solutions, Inc. (TSI) agreed to implement the ROD for OU1. Remedial construction has been completed and groundwater treatment is ongoing. Under the Consent Decree, re-evaluations of the OU1 remedy will be performed every two years, subsequent to approval of the construction completion, to determine if a more protective remedy can be implemented.

On April 20, 1994, OCC and EPA entered into AOC, Index No. II-CERCLA-0117, pursuant to which OCC agreed to perform a RI/FS with respect to a six-mile portion of the Passaic River from an abandoned ConRail Railroad bridge at the downriver boundary located at the U.S. Army Corps of Engineers (USACE) station designation of 40+00 to a transect six miles upriver located at the USACE station designation of 356+80. The sampling results from the investigation in the six mile area and other environmental studies demonstrated that evaluation of a larger area was necessary, in that sediments contaminated with hazardous substances and other potential sources of hazardous substances are present along at least the entire LPRSA. Furthermore, the tidal nature of the Lower Passaic River has resulted in greater dispersion of hazardous substances than originally expected, thus promoting the distribution of hazardous substances into and out of the six mile stretch of the Passaic River. In January 2001, EPA instructed TSI to complete a few remaining remedial investigation tasks, but halt further work while EPA expanded the investigation from six miles to seventeen miles.

## **2. Current actions**

As described above, in 2004, EPA commenced a RI/FS of the 17-mile LPRSA, funded by the CPG under a Settlement Agreement pursuant to CERCLA Section 122(h), 42 U.S.C. § 9622(h). In May 2007, EPA entered into the RI/FS agreement with the CPG, under which the CPG agreed to complete the RI/FS for the LPRSA. The RI/FS is proceeding under the direction and oversight of EPA. Concurrently, EPA is performing a Focused Feasibility Study ("FFS") with respect to an eight-mile portion of the LPRSA and expects to select an early (interim) action for the eight-mile area when the FFS is complete.

On June 23, 2008 EPA entered into an AOC with OCC and Tierra Solutions for the removal and off-site disposal of approximately 40,000 cubic yards of contaminated sediment from within a predetermined area in the LPRSA called the Phase I work area. The same order also provided for the removal and disposal of an additional 160,000 cubic yards in a yet to be sited Confined Disposal Area (CDF). The Phase 1 Removal Action is ongoing and expected to be complete before the end of 2012. Work on Phase 2 has not started.

## **C. State and Local Authorities' Roles**

State and local authorities' roles are described in the previous sections.

## **III. THREATS TO PUBLIC HEALTH, OR WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

The conditions present at the RM 10.9 Removal Area constitute an actual or threatened "release" of a hazardous substance from a facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a). These conditions constitute a threat to public health, welfare, or the environment. EPA has identified conditions in the surface sediment of the RM 10.9 Removal Area that correspond to factors identified in Section 300.415(b)(2) of the NCP, which indicate that a removal action is necessary. Conditions

that correspond to factors that provide a basis for a removal action under Section 300.415 (b)(2) of the NCP include:

**(i) Actual or potential exposure to nearby human populations or animals or the food chain from hazardous substances or pollutants or contaminants;**

High concentrations of 2,3,7,8-TCDD, PCBs, mercury, PAHs and other hazardous substances are present in the sediments of the RM 10.9 Removal Area that could adversely impact nearby human populations, animals or the food chain if released. Surface sediment in the RM 10.9 Removal Area contains 2,3,7,8-TCDD in concentrations up to 21.6 ppb, PCBs at 34 ppm, mercury at 22 ppm and total high molecular weight PAHs at 510 ppm. Exposure to these high concentrations in the surface sediment could pose significant risk to human health or the environment.

Potential human exposures to chemical contaminants include receptors such as anglers and crabbers potentially catching and consuming fish/shellfish (e.g., crabs) from this area as well as boaters and workers in the area. These exposures are primarily through ingestion of contaminated fish or shellfish from the River, dermal contact and/or incidental ingestion of sediment and/or water. Inhalation of volatile or semi-volatile organic compounds from sediment or water is another potential exposure pathway, but not as significant as the ingestion and direct contact pathways. These contaminants have been associated with a variety of adverse health effects including a significantly increased risk of cancer.

Based on the results of monitoring and research undertaken since the mid-1970s, the State of New Jersey has taken a number of steps, in the form of consumption advisories, closures, and sales bans, of fish and crabs to limit the exposure of the fish- and crab-eating public to toxic contaminants in the Lower Passaic River, Newark Bay, Hackensack River, Arthur Kill and Kill Van Kull. Recent studies by NJDEP have determined that, despite warnings currently in place, anglers and crabbers do consume their catch. The initial measures prohibited the sale, and advised against the consumption, of several species of fish and eel and were based on the presence of PCB contamination in the seafood. The discovery of widespread dioxin contamination in the Newark Bay Complex led the State of New Jersey to issue a number of fish consumption advisories in 1983 and 1984, which prohibited the sale or consumption of all fish, shellfish and crustaceans from the LPRSA. These State fish advisories and prohibitions are still in effect.

**(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;**

Sampling results from the RM 10.9 Removal Area, as well as data from other earlier sampling events within the LPRSA, show concentrations of contaminants that significantly exceed the levels that can produce toxic effects to biota. Recent studies have shown that 2,3,7,8-TCDD and PCBs bio-accumulate in fish, to levels rendering the fish unfit for human consumption, from sediment with much lower levels of 2,3,7,8-TCDD and PCBs than found in RM 10.9 Removal Area sediments.



The RM 10.9 Removal Area is located in the Hudson Raritan Estuary. Ecological receptors in the RM 10.9 Removal Area include a range of invertebrate and vertebrate organisms that inhabit or utilize the River either year round or on a migratory basis. These primarily include benthic invertebrates, shellfish (primarily blue crabs), fish, birds (both shorebirds and passerines) and mammals. Exposures for all of these groups can include both direct contact with sediment and water, as well as indirect uptake of bioaccumulative chemical constituents through food web (i.e., feeding) interactions. The interaction between the ecological receptors and high levels of 2,3,7,8-TCDD, PCBs and other contaminants in the surface sediment of the RM 10.9 Removal Area is adversely impacting the estuary.

**(iv) High levels of hazardous substances or pollutants or contaminants at or near the surface that may migrate;**

As previously discussed, high levels of contamination are present in the surface sediment within the RM 10.9 Removal Area. These sediments are in contact with the waters of the Passaic River, and are susceptible to erosion and scouring or other disturbances on an ongoing and continuous basis. During high-flow events, elevated shear stresses created by higher flows could lead to significant erosion, increasing the threat of further releases of hazardous substances. Analysis of recent surface sediment data shows that the average surface sediment concentrations for 2,3,7,8-TCDD, PCBs and Mercury in the RM 10.9 Removal Area are among the highest in the LPRSA.

**(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.**

The potential for significant contaminant migration from storm events and tidal action continues to be a major concern. Without a removal action to isolate the highly contaminated surface sediments in the RM 10.9 Removal Area, weather and hydrologic events will continue to erode and suspend these contaminated sediments and facilitate their migration throughout the LPRSA and Newark Bay, impacting human health and the environment.

#### **IV. ENDANGERMENT DETERMINATION**

Actual or threatened releases of hazardous substances from the RM 10.9 Removal Area, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

#### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

##### **A. Proposed Actions**

##### **1. Proposed action description**

The time critical removal action is being performed to reduce exposure of receptors to, and

prevent potentially significant migration of contamination from, the RM 10.9 Removal Area. In addition to addressing these time-critical concerns, sediments removed from the RM 10.9 Removal Area will be used to conduct sediment treatment and/or decontamination bench-scale tests (Section 3, Description of alternative technologies).

Between 15,000 and 20,000 cubic yards (top two feet) of in-place contaminated sediment will be removed from the RM 10.9 Removal Area; the exact amount will be refined during the design. During the design of the removal action, the means and methods for sediment removal, including best practices to minimize the resuspension of contaminated sediment during the removal will be determined. A protective cap will be designed, constructed, monitored, and maintained over the RM 10.9 Removal Area. Operation and Maintenance (O&M) and performance monitoring of the cap will be conducted to determine whether it continues to meet performance standards, and to insure that its integrity is maintained pending the selection of a remedial action addressing the full LPRSA, which includes the RM 10.9 Removal Area. Data from the performance monitoring effort may also help inform future decisions and/or remedial designs in the LPRSA. The cap shall be constructed using suitably protective capping designs which may include the use of activated carbon layers or other materials to reduce bioavailability and migration of contamination as well as cap armoring to protect portions of the RM 10.9 Removal Area subject to higher shear stresses from potential erosion.

## **2. Contribution to remedial performance**

The Diamond Alkali Site was placed on the NPL in 1984. As described previously, a FFS for an early action on the sediments of the lower eight miles of the River and an RI/FS for the 17-mile tidal portion of the River are underway to address the remediation of the overall LPRSA. The removal action will assist in any long-term remediation of sediment contamination in the River by removing the most highly contaminated surface sediments that are contributing contaminants to the LPRSA. This removal action will help protect public health, welfare, and the environment until a permanent remedy can be selected and implemented.

The proposed removal action at the RM 10.9 is consistent with the requirement of Section 104(a)(2) of CERCLA, 42 U.S.C. §104(a) (2) which states that "any removal action undertaken ...should, to the extent ...practicable, contribute to the efficient performance of any long term remedial action with respect to the release or threatened release concerned." Since any remedial action undertaken at the Site would benefit from the work items in this removal action, the cleanup effort is consistent with any future remedial work.

## **3. Description of alternative technologies**

Sediment treatment/decontamination vendors have been identified who are interested in conducting bench and/or pilot-scale tests on contaminated sediment from the RM 10.9 Removal Area with the objective of advancing technologies available for the treatment of large quantities of contaminated sediments from maintenance or environmental dredging projects. Vendors will perform bench-scale testing on representative samples of sediment, to determine the overall feasibility and economics of specific treatment technologies. The bench-scale tests to determine the feasibility of proceeding to full scale pilot demonstration projects are to be conducted during

development of the work plans to conduct the removal. Should the bench-scale tests suggest that a technology is not effective or feasible, the sediments from the Removal Area will be disposed of at an appropriately permitted EPA-approved disposal facility.

If the decision is made to proceed with pilot-scale tests, the removed sediment will be transported to the pilot study vendor(s)' treatment locations. Conduct of the pilot-scale tests will not impact the implementation schedule of the removal and capping activities.

#### 4. EE/CA

Due to the time critical nature of the proposed removal action an EE/CA was not conducted.

#### 5. Applicable or relevant and appropriate requirements (ARARs)

Applicable or Relevant and Appropriate Requirements (ARARs) that are within the scope of this removal action will be complied with to the extent practicable, considering the exigencies of the situation. Potential federal and state ARARs for this removal action are listed below. Additional ARARs may be identified as details of the project are developed.

##### *Federal Requirements*

- Section 112 of the Clean Air Act (CAA)
- Section 401 and 404 of the Clean Water Act (CWA) – Water Quality Certification and Dredge and Fill Requirements
- Section 10 of the Rivers and Harbors Appropriations Act
- Section 7 of the Endangered Species Act
- The Fish and Wildlife Coordination Act
- Section 307 of the Federal Coastal Zone Management Act
- The Magnuson-Stevens Fishery Conservation and Management Act, as amended and reauthorized by the Sustainable Fisheries Act
- Resource Conservation and Recovery Act (RCRA) (Subtitle D) Nonhazardous Solid Waste Program and Regulations RCRA (Subtitle C) Hazardous Waste Program and Regulation
- Toxic Substances Control Act – (40 CFR Part 761, Subpart D requirements for storage and disposal of PCB wastes)
- RCRA Land Disposal Restrictions (40 CFR Part 268)

##### *State (substantive requirements only)*

- New Jersey Surface Water Quality Standards developed pursuant to the CWA, New Jersey Water Pollution Control Act and New Jersey Water Quality Planning Act
- New Jersey Soil Erosion and Sediment Control Act
- Tidelands Act (Riparian Lands Leases, Grants and Conveyances)
- Waterfront Development Law
- Flood Hazard Area Control Act
- New Jersey Solid Waste Management Act
- New Jersey Water Pollution Control Act – NJPDES Rules

- New Jersey Technical Requirements for Site Remediation

## **6. Project schedule**

Field activities under this removal action are anticipated to begin in the spring 2013 and be completed in approximately six months.

### **B. Estimated Costs**

The total estimated cost for the removal action is \$20,000,000. In accordance with the EPA cost-estimating guidance, the costs are intended to be estimates within a -30 to +50 percent range. It is estimated that EPA oversight costs for the removal action will be approximately \$1.5 million.

## **VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

Should the response action be delayed or not taken, high levels of 2,3,7,8-TCDD, PCBs, mercury, PAHs and other contaminants present in surface sediments of the RM 10.9 Removal Area will continue to be released during weather and hydrologic events and migrate throughout the LPRSA and Newark Bay further endangering public health and the environment.

## **VII. OUTSTANDING POLICY ISSUES**

None.

## **VIII. ENFORCEMENT**

It is currently anticipated that some or all of the CPG members will enter into an Administrative Settlement Agreement and Order on Consent (Removal AOC) to perform the removal action described in this Action Memorandum. In order to guarantee performance of the work, the Removal AOC calls for the settling parties to establish a trust account to fund the removal action, for the benefit of EPA. Should the parties default on the work, EPA will have immediate access to the monies in this account.

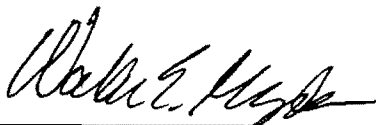
## **IX. RECOMMENDATION**

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action.

This decision document, which selects the time-critical removal action for the RM 10.9 Removal Area in Lyndhurst, New Jersey was developed in accordance with CERCLA, and is not inconsistent with the NCP. The decision documented in this Action Memorandum is based on the Administrative Record for the removal action.

The NJDEP was consulted and agrees with the selected removal action for the Site.

Please indicate your approval of the proposed response action by signing below.

Approve:  Date: May 21, 2012  
Walter E. Mugdan, Director  
Emergency and Remedial Response Division

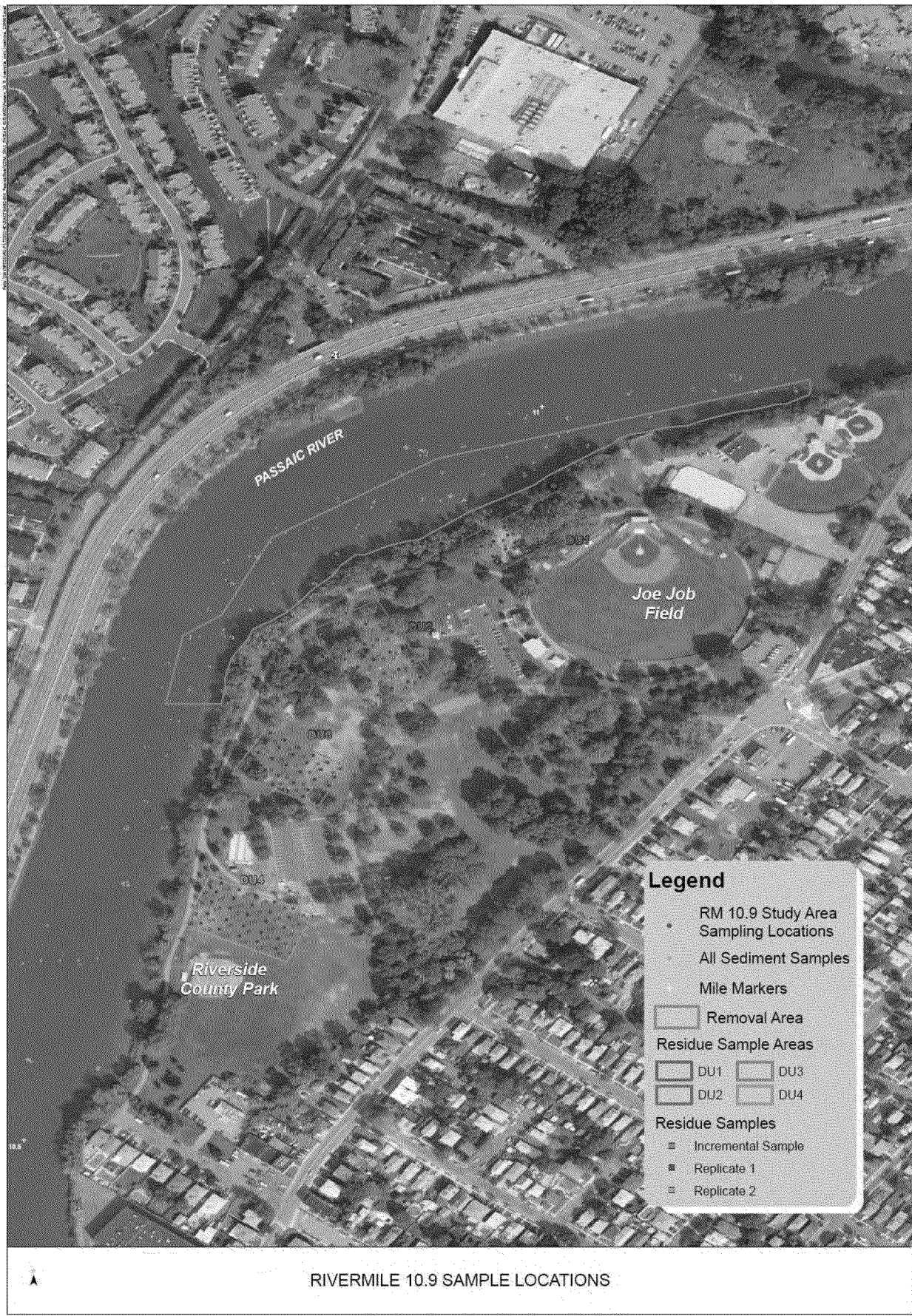
Disapprove: \_\_\_\_\_ Date: \_\_\_\_\_  
Walter E. Mugdan, Director  
Emergency and Remedial Response Division

cc: (after approval is obtained)  
J. Rotola, ERRD-RAB  
B. Grealish, ERRD-RAB  
R. Basso, ERRD  
S. Vaughn, ERRD  
D. Karlen, ORC  
S. Flanagan, ORC  
P. Hick, ORC  
D. Kluesner, PAD  
D. Pace, OPM-FMB  
P. McKechnie, OIG  
I. Kropp, NJDEP  
T. Cozzi, NJDEP  
J. Macgregor, NJDEP  
A. Raddant, USDOJ  
R. Mehran, NOAA  
L. Baron, USACE  
T. Kubiak, FWS

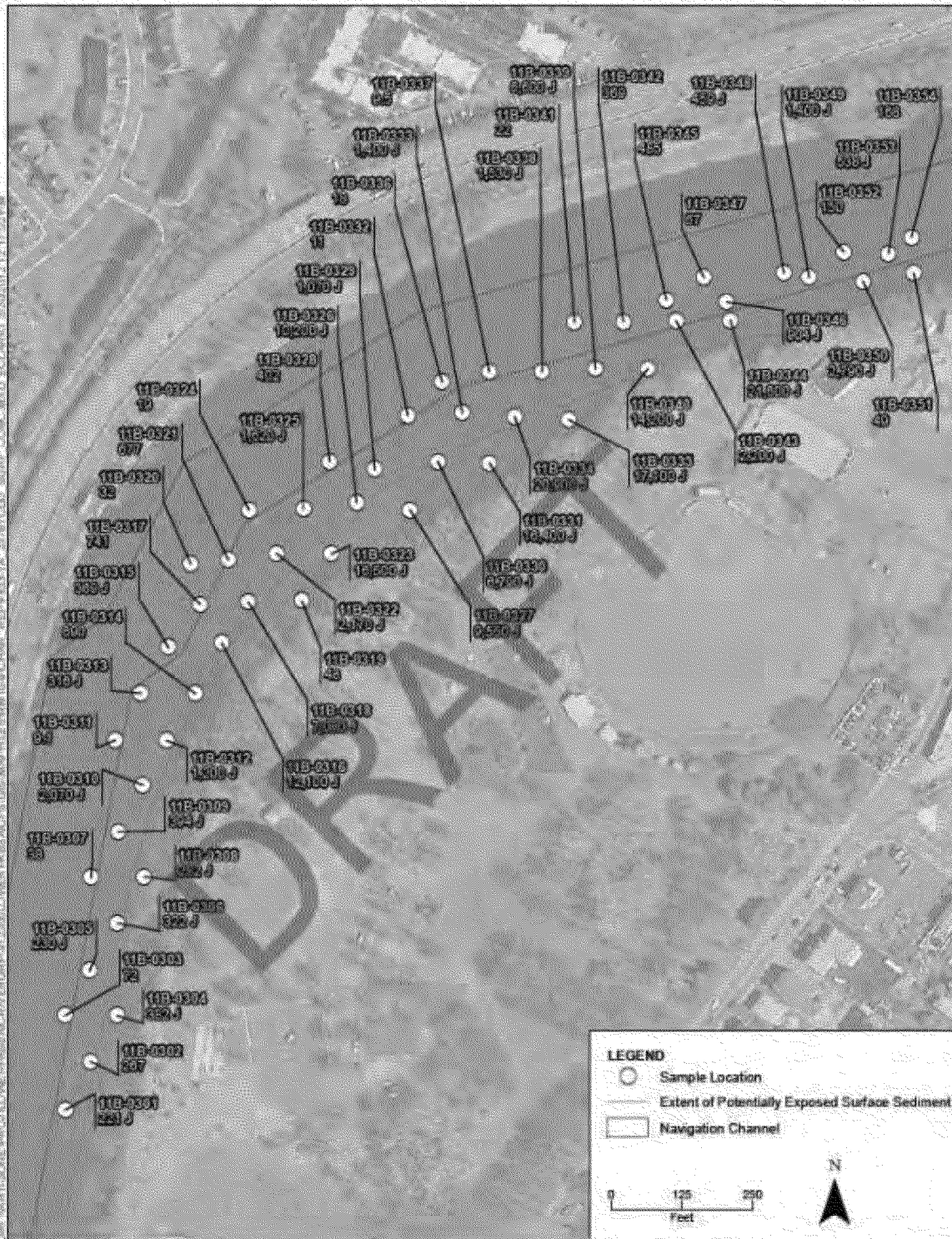


**Figure 1**

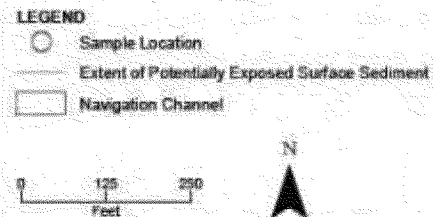




**Figure 2**



1. Orthophoto: NAD83, 2007
2. Surficial - sample collected from 0.0 - 0.5 feet below sediment surface
3. Sample locations shown in this figure are the primary core locations listed in Table 3-5.
4. Sample locations shown are identified as 11B-03XX, where XX is a code specific to each location.
5. Data below sample location presented as Result Qualifier (when present)
6. All values are shown in nanograms per kilogram (ng/kg)
7. TCDD - tetrachlorodibenzo-p-dioxin
8. The Extent of Potentially Exposed Surface Sediment was generated from the -2ft (NGVD29) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 Bathymetry Survey conducted as part of the RMA 10.9 Characterization Program.
9. J - the analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample.



**FIGURE 3-1.a**  
**2,3,7,8-TCDD**

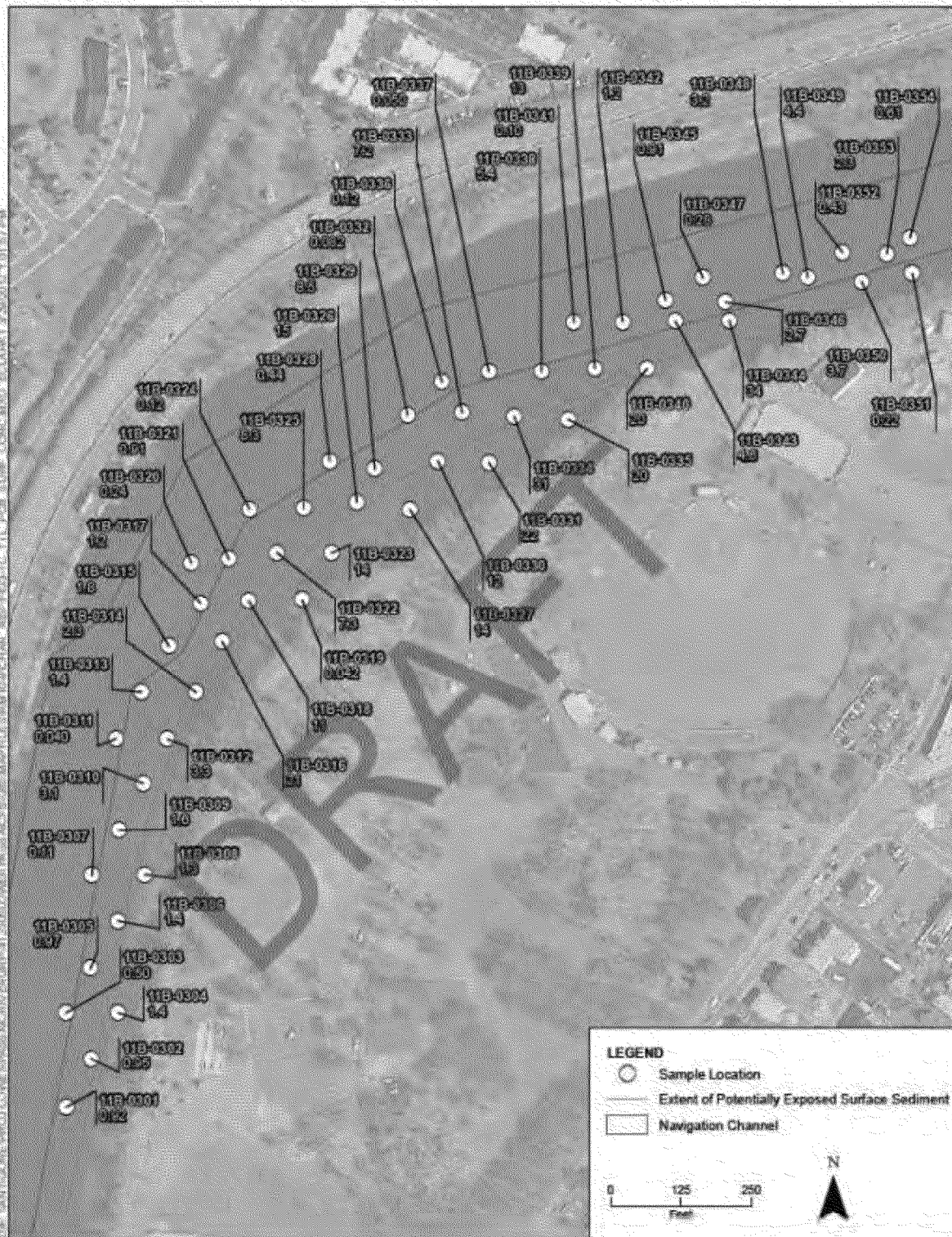
**Surficial Concentration**

*RMA 10.9 Characterization Program Summary*  
*Lower Passaic River Study Area, New Jersey*

**CH2MHILL**

**Figure 3**



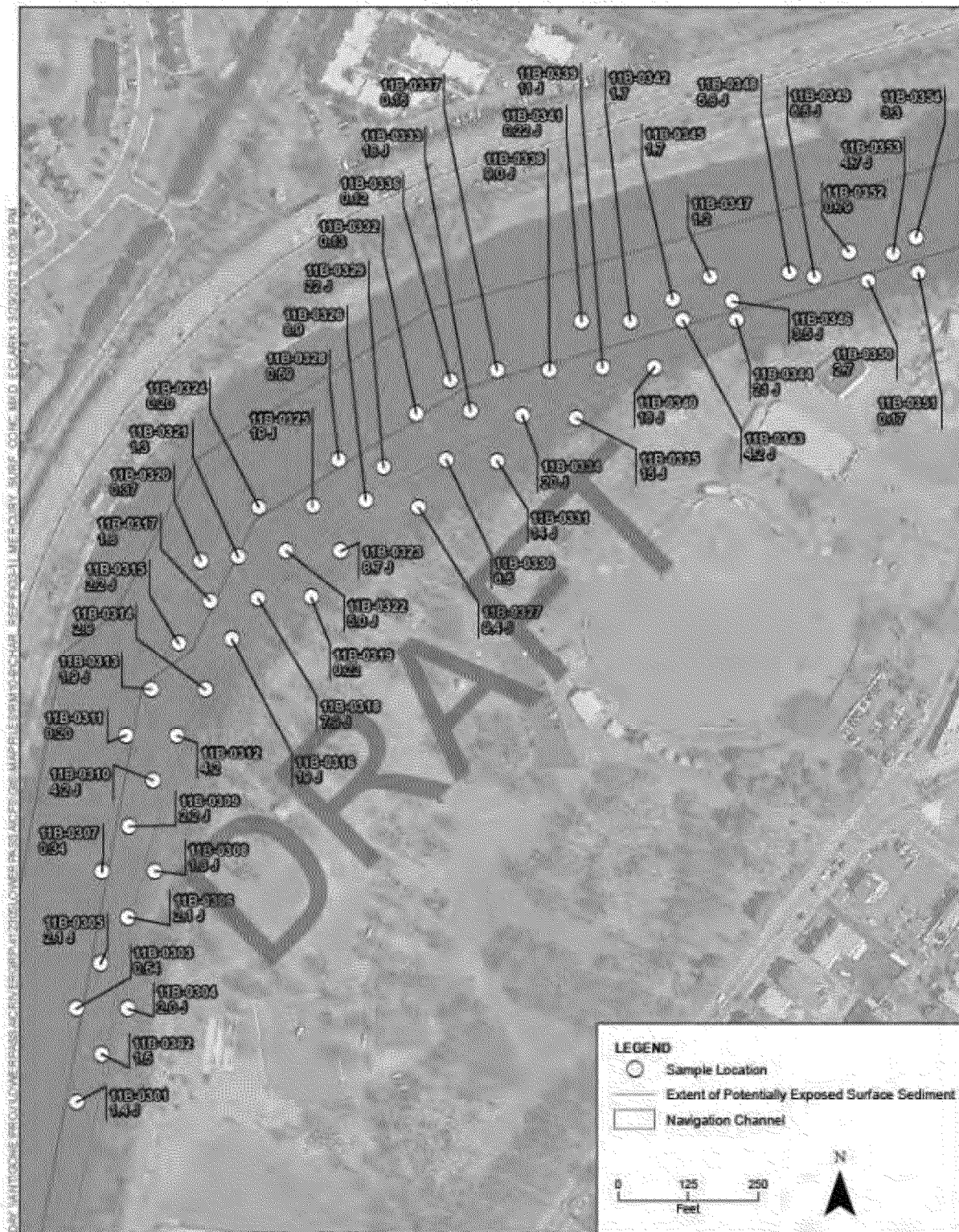


1. Orthophoto: NJGIS, 2007
2. Surficial - sample collected from 0.0 - 0.5 feet below sediment surface
3. Sample locations shown in this figure are the primary core locations listed in Table 2-5.
4. Sample locations shown are identified as 11B-XXXX, where XX is a code specific to each location.
5. Data below sample location presented as Result Qualifier (where present)
6. All values are shown in milligrams per kilogram (mg/kg)
7. PCBs = polychlorinated biphenyls
8. Total PCB Congeners = the sum of all PCB congeners
9. The Extent of Potentially Exposed Surface Sediment was generated from the -21 (NGVD29) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 bathymetry survey conducted as part of the RM 10.9 Characterization Program.

**FIGURE 3-1.c**  
**Total PCB Congeners**  
**Surficial Concentration**  
 RM 10.9 Characterization Program Summary  
 Lower Passaic River Study Area, New Jersey  
**CH2MHILL**

**AZCOM**

**Figure 4**



1. Orthophoto: NJGIS, 2007
2. Surficial = sample collected from 0.0 - 0.5 feet below sediment surface
3. Sample locations shown in this figure are the primary core locations listed in Table 2-5.
4. Sample locations shown are identified as 11B-03XX, where XX is a code specific to each location.
5. Data below sample location presented as Result Qualifier (when present)
6. All values are shown in milligrams per kilogram (mg/kg)
7. The Extent of Potentially Exposed Surface Sediment was generated from the -2ft (NGVD29) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 Bathymetry Survey conducted as part of the RM 10.9 Characterization Program.
8. J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

**FIGURE 3-1.i**  
**Mercury**  
**Surficial Concentration**  
*RM 10.9 Characterization Program Summary*  
*Lower Passaic River Study Area, New Jersey*

AECOM

CH2MHILL

Figure 5



## Appendix C

### The RM 10.9 Sediment Deposit and Removal Area





**APPENDIX D**  
**LOWER PASSAIC RIVER STUDY AREA**  
**RM 10.9 REMOVAL ACTION**

**I. INTRODUCTION**

**A. Purpose**

The purpose of this Statement of Work is to provide a framework under which the Settling Parties will develop work plans, design and other supporting documents to perform a Time Critical Removal Action (TCRA) which includes removing, capping, performing bench-scale sediment treatment and/or decontamination tests, and, potentially, pilot-scale tests, on a portion of the sediments on the eastern side of the Lower Passaic River in the vicinity of RM 10.9 where a detailed investigation was conducted as part of the Lower Passaic River Study Area (LPRSA) Remedial Investigation/Feasibility Study (RI/FS). The RM 10.9 study area extends approximately 2,380 ft, from RM 10.65 to RM 11.1, along an inside bend of the river upstream of the DeJesse-Avondale Street Bridge and includes the mudflat and point bar in the eastern half of the river channel. Sediments within this area of interest contain chemicals of potential concern (COPCs) including polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDD/PCDFs), polychlorinated biphenyls (PCBs), mercury, polyaromatic hydrocarbons (PAHs), pesticides and metals, as well as other contaminants.

The TCRA is being performed to reduce exposure of receptors to, and prevent potentially significant migration of contamination from, a portion of the RM 10.9 study area hereinafter referred to as the Removal Area, defined as the approximately 5-acre area delineated in Figure 1, which has been found to contain highly elevated concentrations of multiple COPCs. In addition to addressing these time-critical concerns, sediments removed from the Removal Area will be used to conduct sediment treatment and/or decontamination bench-scale tests. Based on the results of these tests and the overall timing of the work, and at the discretion of the Settling Parties, ex-situ treatment and/or decontamination pilot-scale tests may be conducted as well.

To meet the objectives of the TCRA, the Settling Parties will remove approximately 2 feet of sediment from the Removal Area and then cap this area. The volume of material to be removed is expected to be approximately 16,000 cubic yards; this number will be refined during the design. If pilot tests are not conducted, the removed sediment will be disposed of at an EPA-approved off-site facility. In the event that pilot tests are conducted, then the final disposition of the treated sediment will be determined as part of the pilot test work plans.

**B. Project Description**

The Settling Parties shall perform all actions necessary to remove sediment from the Removal Area, place a cap over this area, provide for the conduct of bench-scale tests on sediment from this area, and properly dispose of the removed material. The Removal Area is bounded on the west by the eastern navigational channel limits and bounded on the east by the mean high water limits. The actual lateral and vertical extent of the Removal Area may be refined based on the results of the pre-design investigation and the design needs of the cap.

The TCRA will reduce exposure to elevated COPCs present in the Removal Area. Removal and capping of the contaminated sediment will significantly decrease surface sediment COPC levels and thereby reduce exposure of human and ecological receptors contacting surface sediments, including river recreators (e.g., waders, boaters, anglers), who may incidentally ingest, or come into contact with, the surface sediments present in the Removal Area. Surface sediment COPC levels will be reduced to site-wide concentration levels, or lower, following sediment removal and subsequent capping of the Removal Area. The TCRA will also prevent migration of contamination from the Removal Area to other parts of the river.

**C. Description of the Removal Action and Capping**

The Settling Parties shall remove approximately 16,000 cubic yards (top two feet) of in-place contaminated sediment from the Removal Area. During the design of the removal action, the Settling Parties shall evaluate the means and methods for sediment removal, including best practices to minimize the potential release of COPCs during the removal. A protective cap will be designed, constructed, monitored, and maintained over the Removal Area. The Settling Parties shall conduct performance monitoring and Operations and Maintenance (O&M) of the cap to determine whether it continues to meet performance standards, and to insure that its integrity is maintained pending the selection of a remedial action addressing the full LPRSA, which includes the Removal Area. Data from the performance monitoring effort may also help inform future decisions and/or remedial designs in the LPRSA. The cap shall be constructed using suitably protective capping designs which may include the use of activated carbon layers or other materials to reduce bioavailability and migration of COPCs as well as cap armoring to protect portions of the Removal Area subject to higher shear stresses from potential erosion.

**D. Description of Bench-Scale Tests, Pilot-Scale Tests, and Disposal of Sediment**

The Settling Parties have identified sediment treatment vendors who are interested in conducting bench/pilot-scale tests on contaminated sediment from RM 10.9 with the objective of advancing technologies available for the treatment

of large quantities of contaminated sediments from maintenance or environmental dredging projects.

The Settling Parties shall contract with treatment vendors to perform bench-scale testing on representative samples of sediment, to determine the overall feasibility and economics of specific treatment technologies. The bench-scale tests shall be conducted during development of the work plans to conduct the removal. The Settling Parties shall provide to EPA a full evaluation of the findings of the bench-scale testing, including the Settling Parties' rationale and decision for conducting pilot-scale testing of specific technologies and/or directly transporting and disposing of the sediments from the Removal Area at an appropriately permitted, EPA-approved disposal facility. Should the bench-scale tests suggest that a technology is not effective or feasible, the Settling Parties' findings will document the basis for the decision to not conduct pilot-scale testing for that technology.

If the decision is made to proceed with pilot-scale tests, the Settling Parties shall transport the removed sediment to the pilot study vendor(s)' treatment locations; conduct of the pilot-scale tests shall not impact the implementation schedule of the removal and capping activities. Otherwise, the Settling Parties shall dispose of the material at an appropriately permitted, EPA-approved disposal facility. The results of the bench-scale tests and, if conducted, information obtained from pilot-scale test(s), may help inform the remedy selection process for the LPRSA and Newark Bay.

## II. WORK TO BE PERFORMED

The work flow for this SOW is provided in Figure 2.

### A. Removal and Capping Activities to be Completed Prior to May 30, 2012

#### 1. RM 10.9 Quality Assurance Project Plan (QAPP) Addendum A and Data Collection Activities

The Settling Parties shall prepare an addendum to the RM 10.9 QAPP, as defined in the Settlement Agreement, to collect additional samples to refine the delineation of the extent of the Removal Area, and collect these samples. At a minimum, additional sediment cores will be collected from the northern end of the Removal Area, as currently delineated, and sediment samples will be collected on-shore, along the edge of the Removal Area.

#### 2. Data Gap Analysis and Data Collection QAPP

The Settling Parties shall conduct a Data Gap Analysis of the RM 10.9 study area to identify additional data (including, but not necessarily limited to, geophysical and groundwater data) needed to support the removal and capping design needs. A Data Collection QAPP shall be prepared providing the details of the collection of these additional data.

**B. Removal and Capping Activities to be Completed after Effective Date of Settlement Agreement**

**1. Removal and Capping Work Plan/Basis of Design Report**

The Settling Parties shall submit the Removal and Capping Work Plan/Basis of Design Report (BODR) to EPA for review and approval. The Work Plan portion of this submission shall include, at a minimum, the following:

- Description of Removal and Capping activities
- Tasks necessary to prepare the Pre-Final/Final Designs as required to implement the removal and capping
- Responsibility and authority of all organizations and key personnel
- Overall management strategy for completion of the tasks
- A project schedule including all major activities and deliverables

The BODR shall be prepared based on the results of data collected pursuant to the RM 10.9 QAPP and the Capping and Removal Pre-Design activities. The BODR (30% design) submittal shall include, at a minimum, the following:

- Results of studies and additional field sampling and analysis conducted after the initial RM 10.9 study area investigation, if available
- Preliminary plans, drawings, and sketches
- Methods of sediment removal including resuspension/turbidity control, transport, offloading, stockpiling, and treatment; treated sediment disposal; process water treatment and discharge; capping; cap materials transport, and cap placement
- Design assumptions and parameters, including design constraints, capping performance criteria, and preliminary design calculations
- Outline of implementation specifications
- Proposed siting/locations of staging and processing
- Real estate and easement requirements
- River traffic control procedures
- Weather and river conditions monitoring
- Substantive requirements of ARARs
- Implementation contracting strategy
- Preliminary project schedule
- Anticipated long-term monitoring

The Settling Parties shall submit the Removal and Capping Work Plan/BODR to EPA for review and approval. Once EPA approves the Removal and Capping Work Plan/BODR, the Settling Parties shall implement the Removal and Capping Work Plan and begin work on the Pre-Final Design in accordance with the approved schedule.



**2. Removal and Capping Pre-Final and Final Designs**

The Settling Parties shall submit the Pre-Final Design when the overall design effort is 90% complete. The Pre-Final Design shall fully incorporate EPA comments made to the Removal and Capping Work Plan/BODR. The Pre-Final Design shall include, at a minimum, the following:

- Results of studies and additional field sampling and analysis, if any, completed after submittal of the 30% design
- Design assumptions and parameters, including design constraints, capping performance criteria, and design calculations
- Implementation plans and drawings
- Implementation specifications
- Implementation Quality Assurance Project Plan
- Implementation Health and Safety Plan including community health and safety concerns
- Sediment Dredge Plan (including resuspension/turbidity control) and Pre- and Post-Bathymetry Surveys
- Sediment Transport Plan
- Sediment Offloading Plan
- Sediment Treatment Plan
- Process Water Treatment and Discharge Plan
- Sediment Transport and Disposal Plan
- Sediment Capping Plan (including materials transport and staging)
- Implementation Quality Control Plan
- Permits and other legal requirements, unless work will occur entirely on-site, in which case the submittal shall address substantive requirements of ARARS/TBCs documentation
- Implementation contracting strategy
- River traffic control procedures
- Weather and river conditions monitoring
- Project schedule
- Long-term Monitoring and O&M Plan

The Settling Parties shall submit the Final Design when the design effort is 100% complete. The Final Design shall fully incorporate EPA comments. The Final Design submittals shall include those elements listed for the Pre-Final Design.

**3. Removal and Capping Implementation Activities**

The Settling Parties shall acquire and/or lease property, construct facilities necessary to conduct the “in-water” work (removal/capping), and transport sediment to treatment vendor(s) and/or disposal location(s). Final disposal of the sediment shall be in an appropriately permitted, EPA-approved offsite

facility. The Settling Parties shall begin mobilization and implementation of the removal action upon approval of the Final Design. The Settling Parties shall monitor all sediment dredging, processing, and final disposal activities in accordance with the approved Implementation Quality Control Plan.

4. Removal and Capping Long-Term Monitoring and O&M

The Settling Parties shall implement the approved Long-Term Monitoring and O&M Plan, and provide reports to EPA as determined by this Plan.

C. Bench-Scale Testing and Report

The bench-scale tests will provide information to prepare a preliminary evaluation of the potential effectiveness and implementability of each technology at the pilot scale. These bench-scale tests may include, for example, jar testing, laboratory-scale (e.g., 1/12 pilot-scale) batch unit optimization, and process validation. The bench-scale test results will also provide a basis for the vendor(s) to develop estimates of pilot-scale implementation unit costs to meet performance standards.

The Settling Parties shall provide a report with the findings of the bench-scale tests to EPA. The report shall contain the results of the bench-scale tests, including the efficacy and efficiency of treatment, and the vendor's proposal to conduct the pilot-scale test. The report shall also contain the Settling Parties rationale and resulting decision of whether the technologies will be taken to the pilot-scale.

D. Pilot-Scale Testing

If the Settling Parties decide to proceed with Pilot-Scale Tests, the Settling Parties shall, in coordination with the vendor(s) selected, submit the Pilot-Scale Tests Work Plan to EPA for review and notice to proceed. The Work Plan submittal may include the following:

- Pilot-Scale Testing Objectives/Purpose
- Pilot Scale Testing success criteria
- Permits and other legal requirements, unless work will occur entirely on-site, in which case the submittal shall address substantive requirements of ARARs
- Pilot-Scale Testing assumptions and design constraints
- Proposed siting/locations of staging areas and treatment processes
- Real estate and easement requirements
- Methods and details of the proposed Pilot-Scale Test activities including sediment offloading, stock piling, screening, sediment preparation, sediment treatment and disposal, and water treatment

- Treatment process performance criteria, treatment unit processes, representativeness of removed material, expected removal or treatment efficiencies (concentration and volume), mass balances and design calculations
- Drawings and technical specifications
- Details of measurements and observations to be conducted for the pilot-scale testing
- Details of environmental monitoring to be conducted (i.e., odor, noise and water discharge)
- Responsibility and authority of all organizations and key personnel
- Overall management strategy for completion of the tasks
- A project schedule including all major activities and deliverables

Once EPA provides notice to proceed, the Settling Parties may implement the Pilot-Scale Tests Work Plan in accordance with the Work Plan's schedule. The Settling Parties may terminate the pilot test(s) at their discretion and inform the EPA of their rationale in a written report. Final disposal of the sediment shall be in an appropriately permitted, EPA-approved offsite facility.

### III. PROJECT SCHEDULE/WORK MILESTONES

#### A. Removal and capping activities milestones are established for the project:

Prior to the Effective Date of the Settlement Agreement, or no later than May 30, 2012, the Settling Parties shall submit to EPA a RM 10.9 QAPP Addendum A and complete the sediment collection activities outlined in this QAPP addendum.

Prior to the Effective Date of the Settlement Agreement, or no later than May 30, 2012, the Settling Parties shall submit to EPA the Data Gap Analysis and Data Collection QAPP

45 days after the Effective Date of the Settlement Agreement, the Settling Parties shall submit to EPA the Removal and Capping Work Plan/BODR

60 days after EPA approval of the Removal and Capping Work Plan/BODR, the Settling Parties shall submit to EPA the Removal and Capping Pre-Final Design

60 days after EPA approval of the Removal and Capping Pre-Final Design, the Settling Parties shall submit the Final Design

Immediately upon EPA approval of the Removal and Capping Final Design the Settling Parties shall begin Contractor mobilization to implement the Final Design.

60 days after EPA approval of the Removal and Capping Final Design, the Settling Parties shall begin implementation of the Final Design.

**B. Bench-Scale Testing including QAPP, Results report**

Prior to the Effective Date of the Settlement Agreement, or no later than May 30, 2012, the Settling Parties shall submit RM 10.9 QAPP Addendum A for collecting sediments for bench-scale testing and complete the sediment collection activities outlined in the QAPP addendum.

1 day after the Effective Date of the Settlement Agreement, the Settling Parties shall submit, for EPA's information, the Bench-Scale Test QAPP for each Vendor.

90 days after EPA receives the Bench-Scale Test QAPP, the Settling Parties shall submit to EPA the Bench-Scale Tests Report of Findings and Pilot-Scale Test Proposals and their decision on whether to pursue pilot test(s) or dispose of the material in an approved facility(ies).

**C. Pilot-Scale Testing**

Within 60 days after EPA's acknowledgement of the Settling Parties proceed/not proceed decision for Pilot-Scale Testing, if the Settling Parties have chosen to conduct Pilot-Scale Testing they shall submit the Pilot-Scale Test Work Plan.

Within 90 days after receiving EPA notice to proceed on the Pilot-Scale Test Work Plan, the Settling Parties will begin Contractor mobilization and implementation of the Pilot-Scale Test(s).

**D. Final Reports**

The Settling Parties shall submit a final report summarizing the removal and capping work 90 days after the completion of the activities set forth above in Section IIA and II.B(1) – (3).

If Pilot Scale Tests are performed, then the Settling Parties shall submit a summary report of this activity 90 days after the treatment and disposal of the sediment subject to Pilot-Scale Tests.

Long Term monitoring and O&M of the capping area will be described in the Long-Term Monitoring and O&M plan.

Figure 1. The RM 10.9 Sediment Deposit and Removal Area.



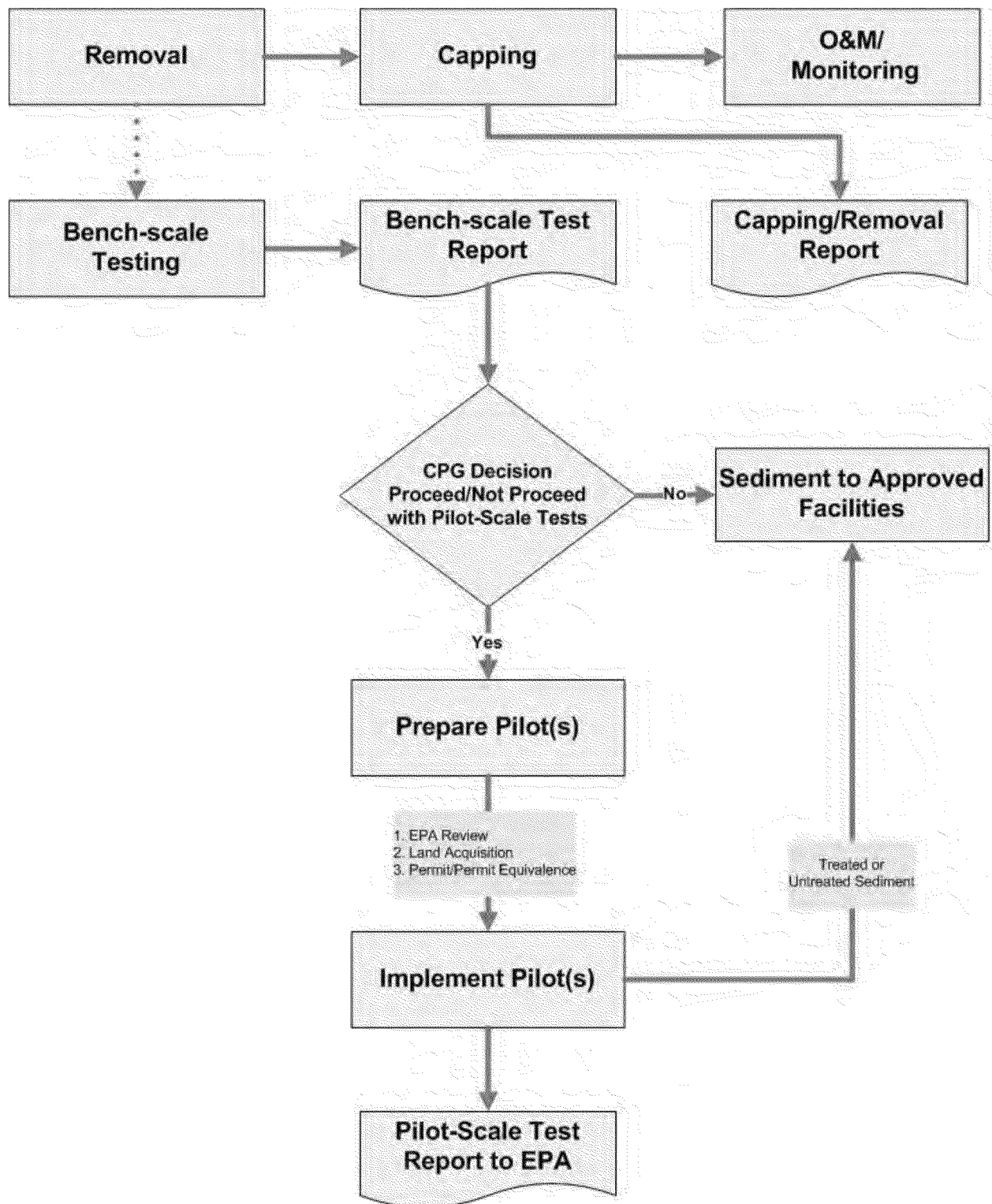


Figure 2. RM 10.9 Statement of Work flow chart.

## Appendix E

### TRUST AGREEMENT

Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site

Dated: June \_\_\_\_\_, 2012

This Trust Agreement (this "Agreement") is entered into as of this \_\_\_\_\_ day of May, 2012 by and between the Settling Parties whose names and states of incorporation are set forth in Appendix A to this Trust Agreement (the "Grantors"), and U.S. Bank National Association, a National Banking Association (the "Trustee").

Whereas, the United States Environmental Protection Agency ("EPA"), an agency of the United States government, and the Grantors have entered into an Administrative Settlement Agreement and Order on Consent for Removal Action, to which this Trust Agreement is attached as Appendix E (hereinafter the "Settlement Agreement"), with respect to the Lower Passaic River Study Area Portion of the Diamond Alkali Superfund Site (the "Site");

Whereas, the Settlement Agreement provides, in Article XXVI, that the Grantors shall provide assurance that funds will be available as and when needed for performance of the Work required by the Settlement Agreement;

Whereas, in order to provide such financial assurance, Grantors have agreed to establish and fund the trust created by this Agreement; and

Whereas, the Grantors, acting through their duly authorized officers, have selected the Trustee to be the trustee under this Agreement, and the Trustee has agreed to act as trustee hereunder.

**Now, therefore** \_\_\_\_\_, the Grantors and the Trustee agree as follows:

#### ***Section 1. Definitions. As used in this Agreement:***

(a) The term "Beneficiary" shall have the meaning assigned thereto in Section 3 of this Agreement.

(b) The term "Business Day" means any day, other than a Saturday or a Sunday, that banks are open for business in the State of New Jersey, USA.

(c) The term "Claim Certificate" shall have the meaning assigned thereto in Section 4(a) of this Agreement.

(d) The term "Fund" shall have the meaning assigned thereto in Section 3 of this Agreement.

(e) The term "Grantors" shall have the meaning assigned thereto in the first paragraph of this Agreement. .

(f) The term "Objection Notice" shall have the meaning assigned thereto in Section 4(b) of this Agreement.

(g) The term "Settlement Agreement" shall have the meaning assigned thereto in the second paragraph of this Agreement.

(h) The term "Site" shall have the meaning assigned thereto in the first paragraph of this Agreement.

(i) The term "Trust" shall have the meaning assigned thereto in Section 3 of this Agreement.

(j) The term "Trustee" shall mean the trustee identified in the first paragraph of this Agreement, along with any successor trustee appointed pursuant to the terms of this Agreement.

(k) The term "Work" shall have the meaning assigned thereto in the Settlement Agreement.

**Section 2. Identification of Facilities and Costs.** This Agreement pertains to costs for Work required at the Site, pursuant to the above referenced Settlement Agreement.

### **Section 3. Establishment of Trust Fund.**

(a) The Grantors and the Trustee hereby establish a trust (the "Trust"), for the benefit of EPA (the "Beneficiary"), to assure that funds are available to pay for performance of the Work in the event that Grantors fail to conduct or complete the Work required by, and in accordance with the terms of, the Settlement Agreement. The Grantors and the Trustee intend that no third party shall have access to monies or other property in the Trust except as expressly provided herein.

(b) The Trust is established initially as consisting of funds in the amount of three million U.S. Dollars (\$3,000,000). This initial payment shall be deposited into the Trust within 90 days from the Effective Date of the Settlement Agreement. By not later than May 8, 2013, a second payment of seven million U.S. Dollars (\$7,000,000) shall be deposited into the Trust. By not later than October 8, 2013, a third payment of seven million U.S. Dollars (\$7,000,000) shall be deposited into the Trust. By not later than May 8, 2014, a fourth payment of three million U.S. Dollars (\$3,000,000) shall be deposited into the Trust. The timing or the amount of the second, third and fourth payment amounts may be amended pursuant to Paragraph 80 and/or Paragraph 82 of the Settlement Agreement. The Trustee shall be notified in writing by Grantors' Representative of any such amendment of timing of payment amounts. Such funds, along with any other monies and/or other property hereafter deposited into the Trust, and together with all earnings and profits thereon, are referred to herein collectively as the "Fund."

(c) The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantors, any payments necessary to discharge any liabilities of the Grantors owed to the United States.

**Section 4. Payment for Work Required Under the Settlement Agreement.**  
The Trustee shall make payments from the Fund in accordance with the following procedures.

(a) From time to time, the Grantors, and/or their authorized representative may request that the Trustee make payment from the Fund for Work performed under the Settlement Agreement by delivering to the Trustee and EPA, a written invoice and certificate (together, a "Claim Certificate") signed by the Grantors' Representative(s) and certifying:

(i) that the invoice is for Work performed at the Site in accordance with the Settlement Agreement;



(ii) a description of the Work that has been performed, the amount of the claim, and the identity of the payee(s); and

(iii) that the Grantors have sent a copy of such Claim Certificate to EPA, both to the EPA attorney and the EPA RPM at their respective addresses shown in this Trust Agreement, including the date on which such copy was sent and, in the case of electronic delivery, the date on which such copy was received by EPA as evidenced by e-mail, facsimile, or other similar delivery methods, or in the case of regular mail, Grantors will provide Trustee with proof of service upon EPA by overnight delivery, certified mail, or other similar delivery methods, within a reasonable time after service is complete.

(iv) the Claim Certificate shall designate the entity to which the requested payment from the Fund is to be made.

(b) EPA may object to any payment requested in a Claim Certificate submitted by the Grantors (or their authorized representative), in whole or in part, by delivering to the Trustee a written notice (an "Objection Notice") within fifteen (15) days after the date of EPA's receipt of the Claim Certificate as shown on the relevant return receipt. An Objection Notice sent by EPA shall state (i) whether EPA objects to all or only-part of the payment requested in the relevant Claim Certificate; (ii) the basis for such objection, (iii) that EPA has sent a copy of such Objection Notice to the Grantors and the date on which such copy was sent; and (iv) the portion of the payment requested in the Claim Certificate, if any, which is not objected to by EPA, which undisputed portion the Trustee shall proceed to distribute in accordance with Section 4(d) below. EPA may object to a request for payment contained in a Claim Certificate only on the grounds that the requested payment is either (x) not for the costs of Work under the Settlement Agreement or (y) otherwise inconsistent with the terms and conditions of the Settlement Agreement.

(c) If the Trustee receives a Claim Certificate and does not receive an Objection Notice from EPA within the time period specified in Section 4(b) above, the Trustee shall, after the expiration of such time period, promptly make the payment from the Fund requested in such Claim Certificate.

(d) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b).above, but which Objection Notice objects to only a portion of the requested payment, the Trustee shall, after the expiration of such time period, promptly make payment from the Fund of the uncontested amount as requested in the Claim Certificate. The Trustee shall not make any payment from the Fund for the portion of the requested payment to which EPA has objected in its Objection Notice.

(e) If the Trustee receives a Claim Certificate and also receives an Objection Notice from EPA within the time period specified in Section 4(b) above, which Objection Notice objects to all of the requested payment, the Trustee shall not make any payment from the Fund for amounts requested in such Claim Certificate.

(f) Any disputes with respect to requests for payments or Objection Notices shall be resolved pursuant to Section XVI (Dispute Resolution) of the Settlement Agreement.

(g) If, at any time during the term of this Agreement, EPA implements a "Work Takeover" pursuant to the terms of the Settlement Agreement and intends to direct

payment of monies from the Fund to pay for performance of Work during the period of such Work Takeover, the timing and amounts of the payments established by Section 3(b) above shall be superseded, and consistent with the requirements of Paragraph 85 of the Settlement Agreement, the Grantors shall immediately upon written demand of EPA deposit into the Trust in immediately available funds and without setoff, counterclaim or condition of any kind, a cash amount up to but not exceeding the estimated cost of the remaining Work to be performed, as determined by EPA. EPA shall notify the Trustee in writing of EPA's commencement of such Work Takeover. Upon receiving such written notice from EPA, the disbursement procedures set forth in Sections 4(a)-(e) above shall immediately be suspended, and the Trustee shall thereafter make payments from the Fund only to such person or persons as the EPA may direct in writing from time to time for the sole purpose of providing payment for performance of Work required by the Settlement Agreement. Further, after receiving such written notice from EPA, the Trustee shall not make any disbursements from the Fund at the request of the Grantors, including their representatives, or of any other person except at the express written direction of EPA. If EPA ceases such a Work Takeover in accordance with the terms of the Settlement Agreement, EPA shall so notify the Trustee in writing and, upon the Trustee's receipt of such notice, the disbursement procedures specified in Sections 4(a)-(e) above shall be reinstated.

(h) While this Agreement is in effect, disbursements from the Fund are governed exclusively by the express terms of this Agreement.

**Section 5. Trust Management.** The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with directions which the Grantors may communicate in writing to the Trustee from time to time, except that:

(a) securities, notes, and other obligations of any person or entity shall not be acquired or held by the Trustee with monies comprising the Fund, unless they are securities, notes, or other obligations of the U.S. government or any U.S. state government or as otherwise permitted in writing by the EPA;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent such deposits are insured by an agency of the U.S. or any U.S. state government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution, uninvested for a reasonable time and without liability for the payment of interest thereon.

**Section 6. Commingling and Investment.**

(a) The Trustee is expressly authorized in its discretion to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions hereof and thereof, to be commingled with the assets of other trusts participating therein.

(b) The Trustee is authorized to purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

**Section 7. Express Powers of Trustee.** Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(b) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. government or any U.S. state government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; and

(c) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the U.S. government.

**Section 8. Taxes and Expenses.** All taxes of any kind that may be assessed or levied against or in respect of the Fund shall be paid from the Fund. All other expenses and charges incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee, and all other proper charges and disbursements of the Trustee, shall be paid by the Grantors. If the Grantors do not pay such expenses or charges directly within the time period agreed to by the Grantors and the Trustee, the Trustee, on written notice to the EPA attorney and the EPA RPM at their respective addresses shown in this Agreement, may seek payment from the Fund.

**Section 9. Annual Valuation.** The Trustee shall annually, no more than thirty (30) days after the anniversary date of establishment of the Fund, furnish to the Grantors and to the Beneficiary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The annual valuation shall include an accounting of any fees or expenses levied against the Fund. The Trustee shall also provide such information concerning the Fund and this Trust as EPA may request from time to time.

**Section 10. Advice of Counsel.** The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder; provided, however, that any counsel retained by the Trustee for such purposes may not, during the period of its representation of the Trustee, serve as counsel to the Grantors under this Agreement.

**Section 11. Trustee Compensation.** The Trustee shall be entitled to reasonable compensation for its services, as agreed upon in writing with the Grantors and as notified in writing to the Beneficiary.

**Section 12. Trustee and Successor Trustee.** The Trustee and any replacement Trustee must be approved in writing by EPA and must not be affiliated with any of

the Grantors. The Trustee may resign or the Grantors may replace the Trustee, but such resignation or replacement shall not be effective until the Grantors have appointed a successor trustee approved in writing by EPA and this successor accepts such appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantors cannot or do not act in the event of the resignation of the Trustee, the Trustee may apply to EPA or a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the Fund and the Trust in a writing sent to the Grantors, the Beneficiary, and the present Trustee by certified mail not less than 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 8.

**Section 13. Instructions to the Trustee.** All orders, requests and instructions to the Trustee by the Grantors shall be in writing and signed by any of the persons designated in the attached Appendix B (the "Grantors Representative(s)") or such other designees as the Grantors may designate by amendment to Appendix B. All instructions to the Trustee shall be in writing, signed by such persons as are empowered to act on behalf of the entity giving such instructions. Such instruction may include, but not be limited to, instructions to direct the Trustee in any manner regarding the preparation and filing of Tax Returns, if any, by the Trustee. The Trustee shall be fully protected in acting without inquiry on such written instructions given in accordance with the terms of this Agreement. The Trustee shall have no duty to act in the absence of such written instructions, except as expressly provided for herein.

**Section 14. Amendment of Agreement.** This Agreement may be amended only by an instrument in writing executed by the Grantors or the Grantors' Representative(s) and the Trustee, and with the prior written consent of EPA.

**Section 15. Irrevocability and Termination.** This Trust shall be irrevocable and shall continue until terminated upon the earlier to occur of (a) receipt of EPA's notice of completion of work pursuant to the Settlement Agreement and (b) the complete exhaustion of the Fund comprising the Trust as certified in writing by the Trustee to EPA and the Grantors. Upon termination of the Trust pursuant to Section 15(a), all remaining trust property (if any), less final trust administration expenses, shall be delivered to the Grantors.

**Section 16. Immunity and Indemnification.** The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantors or the EPA issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantors from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct made by the Trustee in good faith in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantors fail to provide such defense. If the Grantors fail to fulfill their obligations as set forth in this Section, the Fund shall indemnify and save harmless the Trustee as provided hereinabove.

**Section 17. Choice of Law.** This Agreement shall be administered, construed, and enforced according to the laws of the State of New Jersey.

**Section 18. Interpretation.** As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

**Section 19. Notices.** All notices and other communications given under this agreement shall be in writing and shall be addressed to the parties as follows or to such other address as the parties shall by written notice designate:

(a) If to the Grantors, to William H. Hyatt, Jr., Coordinating Counsel, LPRSA Cooperating Parties Group, c/o K&L Gates, One Newark Center, Newark, N.J. 07102, or william.hyatt@klgates.com.

(b) If to the Trustee; to U.S. Bank National Association, Corporate Trust Department, 21 South Street, Morristown, NJ 07960 tel 973-898-7160, fax #973-682-4540.

(c) If to EPA, to Stephanie Vaughn, Remedial Project Manager for the Site at 290 Broadway, New York, NY 10007, or stephanie.vaughn@epamail.epa.gov, and Sarah P. Flanagan, Assistant Regional Counsel, New Jersey Superfund Branch, USEPA Region 2, at 290 Broadway, New York, NY 10007, or flanagan.sarah@epamail.epa.gov.

**Section 20. Method of Execution.** This Trust Agreement shall be executed in multiple counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument.

**Section 21.** To help the government fight the funding of terrorism and money laundering activities, Federal law requires all financial institutions to obtain, verify and record information that identifies each person who opens an account. For a non-individual person such as a business entity, a charity, a Trust or other legal entity we will ask for documentation to verify its formation and existence as a legal entity. We may also ask to see financial statements, licenses, identification and authorization documents from individuals claiming authority to represent the entity or other relevant documentation

[Remainder of page left blank intentionally.]

## **Appendix F**

### List of Documents

1. Documents, e-mails, records, reports or information altered, mutilated, discarded, destroyed or otherwise disposed of prior to the time the Settling Party received its first notice of liability with respect to the Lower Passaic River Study Area;
2. Prior drafts of documents for which a last draft (document never made final) or final copy still exists;
3. Duplicates of documents maintained in other files;
4. Original documents, copies of which are now maintained only on microfilm, microfiche, CD-ROM disc, or by other similar information archiving methods; or
5. Original documents previously stored on archiving methods identified in Paragraph 4 above, for which the microfilm, microfiche, etc., no longer exists, but from which hard copies printed from the microfilm, microfiche, etc. do exist.

## **Appendix B**

### **RM 10.9 Project Schedule**

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